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EDITORIAL

Matthias Beck

This, the second issue, of the Journal of Risk and Governance presents a mix of health and finance related articles which explore broad topics of risk and governance in contemporary societies.

The first article explores ill health among ex-workers who were exposed to Vinyl Chloride Monomer (VCM). In this context very high levels of reporting, above those expected from comparable surveys, for respiratory and psychological symptoms are identified. This raises serious questions about the failure of industry and regulators to follow up and properly investigate the health status of UK workers exposed to VCM.

The next two papers were presented at the UK Joint University Council's Public Administration Committee conference "New Directions in the Theory and Practice of Public Administration" which was held at the University of York (UK) in September 2008. Paterson's paper explores the emergence of the issue of violence towards nurses as a social problem in connection with two alternative frames. The paper highlights how these frames have influenced the nature of responses to the problem and notes that the recent dominance of the individualising frame is being challenged by the emergence or perhaps re-emergence, of the ideals and values of the therapeutic community. Fitzsimmons' paper on the UK Local Improvement Finance Trust explores why this approach to the development of primary care facilities shares many of the problems of conventional Private Finance Initiative projects.

The final two papers of this issue investigate risk associated with environmentally sensitive industries. Focusing on the determinants of corporate social disclosure in the chemical and oil industries, Toms and Hasseldine note that managers appear to feel an unequal sense of responsibility to different constituencies with their disclosure priorities being determined by stock market accountability, lobbying power of their domestic audience and the political risk of their activities; rather than the impact of their activities in countries of operation. The final paper by Amirzhanova and Beck discusses recent developments within the oil-rich country of Kazakhstan. The authors conclude that this country has been able to address over-dependency with regard to certain oil multi-nationals but still remains vulnerable to "Dutch disease" type problems.

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A WORKER-DRIVEN AND COMMUNITY-BASED INVESTIGATION OF THE HEALTH OF ONE GROUP OF WORKERS EXPOSED TO VINYL CHLORIDE MONOMER (VCM)

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ABSTRACT

Global occupational health history contains numerous cases of employees who worked in hazardous industries, contracted work-caused or work related diseases and who were then neglected and abandoned when those industries closed. Often decades pass before agreement is reached among scientists and civil servants about the causation, impact and compensation of such diseases although a range of risks may well have been identified and control standards set. Evidence may exist, rarely recognised or used by official sources, that employees recognised some of the occupational diseases they faced with sentinel events indicating possible disease causation or the specific causes prior to the scientific community either investigating, revealing or agreeing that such diseases existed.

This health study was organised and carried out by former employees of one plant, now closed, and their representatives. 162 questionnaires from a survey were collected and analysed from former plant workers on selected ill-health reported and primarily relating to respiratory, cardio-vascular and mental health functions as well as recorded angiosarcoma cases. The survey revealed under-reported and unrecorded illnesses in the ex-workers that were associated with VCM in the scientific literature since the 1970s. The paper also documents working conditions using papers and reports from the ex-employees. Government departments at the time of the study such as the HSE (Hereafter Health and Safety Executive: the UK enforcement body on occupational health and safety) and Department of Work and Pensions (DWP) did not and still do not appear to

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offer coordinated and comprehensive support to those who later develop diseases that may be caused or related to their past work.

INTRODUCTION

The history of global occupational health contains numerous cases of employees who work in hazardous industries, contract work-caused and work related diseases and who are then neglected and abandoned when those industries close. Decades pass before agreement is reached among scientists and civil servants about the causation, impact and compensation of such diseases and support for those who contract such diseases. Often evidence exists that employees themselves recognised the occupational diseases they faced with sentinel events indicating possible disease causation or the specific causes prior to the scientific community.

Vinyl chloride was first synthesised in 1835 (IARC 1979:378). Polyvinyl production began in 1927 and was industrially important by the 1930s. Vinyl chloride monomer gas (VCM) production then increased very steadily. In the 1970s about 96% of VCM produced in USA was used for polymer production and the rest for methyl chloroform production and in resin production. Similar patterns of VCM usage emerged in other countries. The largest use for PVC resins in this period was in plastic piping, floor covering and electrical applications. In the UK, PVC and copolymer production figures rose very rapidly between 1960 and 1970s the following figures show: UK PVC and copolymer production figures ranged from 108,000 tonnes in 1960 up to 315,000 tonnes by 1970 [Levinson 1974]. By 1982, UK production figures had reached over 400,000 tonnes. Commensurate activity in tracking the adverse health effects of VCM on workers did not occur.

Toxicology tests established that VCM causes brain tumours in lab tests (Rosenstock and Cullen 1994:600). By 1971-4 Maltoni in Italy had reported on the relationship between inhalation of vinyl chloride and brain tumours in rats (Rosenstock and Cullen 1994:601). In 1974 the first published reports on angiosarcoma cases in VCM workers appeared. From 1976 onwards, reports of increased risk of brain cancers especially glioblasta multiforme, in humans working with VCM appeared in the literature (Waxweiler 1976, Doll 1988, Simonato 1991). Cases of liver angiosarcoma have been reported among workers in PVC fabrication plants (Wagoner 1983). One case of angiosarcoma has also been reported in someone employed at a vinyl chloride factory during the late 1950s but not as a VC production worker (Elliott et al 1997). Two studies at least have also suggested an association between VCM exposure, digestive cancers (Theriault et al 1981; Smulevich et al 1988) and cancers of the lymphatic and haemopoietic systems (Smulevich et al 1988).

Table 1. Dates of knowledge of toxicity of VCM 1927-1981

1927 VCM first used
1949 First reports of liver damage in 14 of 48 exposed VCM workers (Tribuch)
1961 VCM in lab tests affected the liver at 100, 200 and 500ppm (Torkelson)
1963 Reynauds phenomenon and dermatitis problems reported in 6% of a group of 168 Romanian PVC workers (Suciu)
1960s VCM workers were reported to have acro-osteolysis (Pushin 1965; Berk et al 1976)

Table 1 (Continued)

1967 Adverse neurological effects reported for VCM polymerisation workers
1969 Neurological effects of VCM were summarised at an International Conference (Schotteck)
1970 VCM caused cancer in animals (Viola)
1970 PVC linked to pneumoconiosis in one production worker: similar effects reported in over 90 other workers (Szende; Vertkin)
1972 Maltoni reported his first observation of an angiosarcoma in animals exposed to VCM (Levinson 1974:38)
1974 VCM carcinogenic effects were reported in the liver of animals (Maltoni) and BF Goodrich reported 4 angiosarcoma cases in VCM workers in its plants. Bleeding conditions associated with VCM exposure of workers (Veltman;Lilis) Chronic lung disease associated with human exposure to VCM (Miller 1975a) Immunological data from 19 of 28 patients with 'vinyl chloride disease' suggest an immune complex disorder (Ward)
1976 Angiosarcoma became a prescribed industrial disease in UK
1976 Hepatic fibrosis described in VCM workers IARC report on VCM carcinogenicity noted VCM was mutagenic and concluded that vinyl chloride was a human carcinogen and its target organs were the liver, brain, lungs and blood
1981 US researchers found studies suggested a link between VCM and lymphatic and haemapoietic system cancers (Infante 1981) and showed associations between VCM exposure and CNS cancers and lung cancer
IARC re-confirms vinyl chloride as a human carcinogen and noted inconclusive data on breast cancer and urinary cancer in female workers in plastics/PVC fabrication

The USA ATSDR describe the long term lower level human effects of vinyl chloride exposure as 'vinyl chloride disease' which is characterised by severe damage to the liver, effects on the lungs, poor circulation in the fingers, changes in the bone at the end of the fingers, thickening of the skin and changes in the blood" (USA Agency for Toxic Substances and Disease Registry [ATSDR] August 1989:2). This US Agency report accepts that VCM had been linked with cancers of tissues other than the liver in humans. ATSDR in 1997 acknowledged that breathing in VCM for long periods of time could cause liver damage, immune reactions, nerve damage and liver cancer (ATSDR 1997:1)

Government departments such as the HSE and DWP do not offer coordinated and comprehensive support to those who later develop diseases that may be caused or related to their past work. The study presented here describes research designed and conducted by the former employees and their representatives. It demonstrates what might be termed type 8 lay, popular or worker epidemiology (See table below and also Watterson 1992; Watterson 1994; Popay and Williams 1996; Bloor 2000). Such methods have wide applications in public health generally as well as in occupational health (Hynes et al 2003).

Types of Lay Epidemiology

(1) Epidemiologists design, carry out, analyse and present the study
(2) Epidemiologists design, study and train and use lay staff to carry out survey. Epidemiologists analyse and present data.
(3) Epidemiologists invite lay people to contribute to design of study protocol. Lay staff carry out questionnaire surveys, interviews. Epidemiologists analyse, present data.
(4) Epidemiologists invite lay people to contribute to study design. Lay people carry out surveys. Epidemiologists, with lay people, analyse and present results.
(5) Lay people identify problem and invite epidemiologists to investigate the problem. Back to (1)
(6) Lay people identify problems, involve epidemiologists. Joint protocol is drawn up. Back to (3) and (4)
(7) Lay people identify problem, involve epidemiologists. Joint protocol. Lay people and epidemiologists jointly investigate problem, analyse results. Joint presentation of results.
(8) Lay people identify problem. Develop tools with health professionals, lay people collect data, data analysed jointly by lay people and health professionals, joint report produced.

(based on Watterson 1999 and Watterson 2003)

OCCUPATIONAL HYGIENE STANDARDS RELATING TO CONTROLLING VCM EXPOSURES AND POSSIBLE PLANT EXPOSURES AT VINATEX

Exposure limits in the 1970s across the world illustrate the very different risk assessments made for vinyl chloride and were critical to the relatively high exposures of workers to VCM that were acceptable in the UK.

Table 2. Threshold Limit Values for vinyl chloride in 1977

Country	TLV 8 hour	Country	TLV 8 hour
UK	10ppm	Italy	50ppm
Sweden	1ppm	USA	1ppm

Source IARC 1979:380.

Adverse effects of VCM , in terms of animal carcinogenicity, were detected by Maltoni at 50ppm in the 1970s. In 1977 , NIOSH surveyed 3 VCM plants and found 8 hour TWAs for VCM of 0.7-27ppm (La Dou 1997:474). Remarkably in the UK in 1999 the maximum exposure standard for vinyl chloride was still 7ppm over an 8 hour time weighted average with an overriding annual exposure limit of 3ppm. (HSE 1999:21). In the USA in 1999 the ACGIH had a time weighted average for vinyl chloride of 1ppm (ACGIH 199:71)

Where no or incomplete or inaccurate monitoring of VCM occurred in VCM and PVC polymerisation plants, some crude exposure indicators may be available. In the 1940s and

1950s VCM exposures in some PVC plants often exceeded 1000 ppm (Lewis in LaDou 1997:517) In the US exposures in such plants between 1970 and 1974 ranged between 100 and 200 ppm. Without ventilation, typical VCM air concentrations were around 3,000 ppm; in scraping they were 600-1000 ppm; near polymer reactors in 1950s levels of 4000 ppm have been recorded. Factory workplaces where PVC has been produced have had air concentrations of 40-312 ppm with peaks in 1950s of up to 33,500 ppm (IARC 1979:380). In UK cable factories, VCM levels of 0.15-0.35 ppm were recorded in the 1970s (Murdoch and Hammond 1977:55).

The odour threshold of VCM for humans may vary but has been placed at around 500 ppm. This may serve as some indicator of levels reported by ex-workers in Vinatex. VCM levels recorded in autoclave cleaning during the 1970s were also recorded at around 3000 ppm (Barnes cited in Langard 2000). The Norwegians considered that 'Before 1970 it is likely that a surplus of monomer was present in the PVC when leaving the manufacturing plant which could have been 500 ppm of VCM (Landgard 2000). In Russia large epidemiological studies found that cancer risks to VCM workers were highest in workers exposed to 300mg/m^3 or more who worked at plants for 15 to 19 years (Smulevich et al 1988)

DISEASES ASSOCIATED WITH VCM REPORTED IN THE 1970 OR RECORDED IN COHORTS OF WORKERS EXPOSED IN THE 1970S OF RELEVANCE TO THE VINATEX WORKERS

Hepatic angiosarcoma has been strongly linked to VCM exposure since the 1970s even when a powerful healthy worker effect was observed in cohorts studied (Langard et al 2000; Fox et al 1977; Heldass et al 1984; Salmon 1985; Jones et al 1988). In 1974 two angiosarcoma cases were reported in Italian workers (Maltoni 1974). In 1975 two possible angiosarcoma cases were reported in Swedish PVC workers (Byren et al 1975); two in Yugoslavia in the same year (Zorica et al 1975); and ten in Canada (Delorme 1978). Similar cases were reported in France (Makk et al 1975). Recent studies have continued to detect excesses of primary liver cancer cases in 1259 Italian workers exposed to VCM through the 1970s and 1980s (8 observed cases) (Piratsu et al 1998). Cohort mortality studies of VCM exposed workers showed significant mortality rates for liver cancer especially angiosarcoma. 1991 studies showed biliary tract cancer and liver cancer risks other than angiosarcoma to be increased in VCM workers (Wong 1991). Other liver changes have been reported in PVC workers with 10 – 25% of PVC workers in cross-sectional studies in the 1970s having liver function abnormalities although not all these effects were connected to VCM exposure (Rosenstock and Cullen 1994:789). Researchers concluded that relatively low levels of VCM cause liver damage (Cheng et al 1999). Italian studies of 1259 VCM and polymerisation plant workers found non-significant increases of this disease in workers in two out of three plants.

Lung cancer has been associated with VCM exposure since at least the 1970s (Maltoni et al 1981; Wagoner 1983; Langard et al 2000). By 1979 VCM was designated as a known cause of human lung cancer (Rosenstock and Cullen 1994:550). IARC in 1979 noted 'several independent but mutually confirmatory studies have shown that exposure to vinyl chloride results in an increased carcinogenic risk in humans, involving the lung....' (IARC 1979:377).

By 1989, vinyl chloride in plastics production was listed as a suspect cause of lung cancer (Wu et al 1989). In one Italian VCM plant, observed mortality for lung cancer was higher than expected with an SMR of 146 based on 14 cases (Piratsu 1998). The researchers considered that their results pointed to VCM's 'possible role in lung cancer development' as indicated in previous studies in the Porto Marghera plants. In 2000, a 428 Norwegian worker cohort followed from 1953 to 1993 observed 11 cases of lung cancer against 8 expected (Langard 2000).

Laryngeal cancer has been associated with VCM since the 1970s-80s (Langard et al 2000). Skin cancer has been associated with VCM since the 1970s-80s (Heldaas 1984:Storetvedt et al 1987; Langard et al 2000). In a recent study of a cohort of 428 workers in Norway in a study group followed from 1953 to 1993, 7 melanoma cases were recorded against 2.07 expected (Langard et al 2000). In addition to the melanoma cases, a follow up study found 5 cases of spinocellular skin cancer when 1.7 were expected. Bladder cancer has been associated with VCM since the early 1990s (Simonato et al 1991; Langard et al 2000)

Brain cancer has been associated with VCM since the 1970s-80s (Wagoner 1983; Smulevich 1988; Langard et al 2000). IARC in 1979 noted 'several independent but mutually confirmatory studies have shown that exposure to vinyl chloride results in an increased carcinogenic risk in humans, involving the brain." (IARC 1979:377) In 1991 Wong in a study for the industry of 1536 deaths in 10173 PVC workers across 37 plants in the USA found a significant increase in brain tumours especially of workers exposed to VCM for 20 or more years (Wong 1991). In the mid 1990s leading occupational physicians felt able to state with regard to human brain neoplasms that " an association with vinyl chloride is generally (though not universally) agreed upon as an occupational cause of brain neoplasms and may be considered as a suspected cause of the disease" (in Rosenstock and Cullen 1994:600). Adverse effects on the neurological system have also been associated with VCM. 5 out of 8 studies assessed in 1980 found excesses of CNS tumours in VCM exposed workers (Infante 1980)

Thyroid cancer has been associated with VCM since the 1970s-80s (Langard et al 2000). Testicular cancer has been associated with VCM (Langard et al 2000). Leukaemias associated with VCM exposure in humans (Smulevich et al 1988). IARC in 1979 noted 'several independent but mutually confirmatory studies have shown that exposure to vinyl chloride results in an increased carcinogenic risk in humans, involving the haemo-lymphopoietic systems ." (IARC 1979:377).

Immunological data from a small study of 19 of 28 patients with 'vinyl chloride disease' suggest an immune complex disorder (Ward 1976). Occupational sclerdoma has been linked to VCM exposure. "a scleroderma-like syndrome has been well documented in workers exposed to vinyl chloride" (Rosenstock and Cullen 1994:347). Others consider that no conclusive association has been reported yet (Steen 1999). However, associations between autoimmune diseases in humans and exposure to VC have been reported (Powell 1999). VCM exposed male workers have shown 'decreased androgen levels, decreased libido but few studies have examined VCM reproductive effects on women workers (La Dou 1997:475).

Impaired pulmonary function in VC exposed workers has been reported (Miller et al 1975b, Gamble et al 1976). In 1976 20% of workers at one PVC plant were found to have opacities on chest X-rays (Lilis 1976). There appears to be a link between such opacities and

pulmonary lung function abnormalities. Cases of pneumoconiosis in PVC dust exposed workers have been reported and some PVC production and fabrication workers exposed to more than 10/mg^3 of PVC dust have reduced lung function and an increased incidence of chest X-ray abnormalities (LaDou 1997). In 1982 a UK study suggested that 'work in a PVC plant before 1975 may have involved exposure to a substance that caused more damage to the lungs in a small number of men' (Lloyd et al 1982)

Skeletal effects were first reported in humans exposed to VCM in the late 1950s and defined as acro-osteolysis syndrome (Rosenstock and Cullen 1994:788). Around 3% to 6% of the PVC workers studied in the 1960s and 1970s had this syndrome and it was mainly linked to workers with high VCM exposure. Excesses of cancer of the bone have been associated with VCM workers in the period 1939-1977 (Smulevich et al 1988).

Cardio-vascular and other related effects of chemicals including VCM on workers has been the subject of enquiry from at least the early 1970s (Capellini et al 1974). 16 of 20 German PVC workers found to have thrombocytopenia (Marsteller et al 1973). By 1977 researchers were confident in observing that 'thrombocytopenia is often one of the first signs of vinyl chloride disease': with changes in platelets and destruction of platelets (Heusermann et al 1977). Changes in blood of VCM exposed workers were identified as a well known effect of that exposure (ATSDR 1989) as were other harmful effects to the cardio-vascular system (Maschewsky 1993). In 1996 commentators concluded that chemicals including vinyl chloride 'produced both hypertension and cardiac arrhythmias in most studies' (Taylor 1996)

In 1981 a study explored neurological changes in vinyl chloride exposed workers (Styblova et al 1981). In 1983 neurological disturbances were found among 200 PVC production workers with 27% having astheno-autonomic syndrome and 44% with various neurological effects. 48% also reported headaches, 26% nervousness and 14% loss of memory (Langauer-Lewowicka et al 1983). Similar results were found in a Polish study with various cerebellar syndromes and headaches, irritability and sleep disturbance also reported (Kurzbauer 1988).

One study at least has examined both neurological and psychiatric disorders involved in vinyl chloride disease based on literature searches and case studies. The results found in chronically exposed VCM workers: neurological disturbances including sensory-motor polyneuropathy, trigeminal sensory neuropathy, slight pyramidal signs and cerebellar and extrapyrimidal.. cerebellar… motor disorders. Psychiatric disturbances present as neurasthenic or depressive syndromes (Podoll et al 1990).

THE VINATEX VINYL CHLORIDE PLANT

Data on the Plant

The Chesterfield vinyl chloride plant opened in 1968 and began production in 1969. It is understood that the plant had two reactor buildings, one operational in 1969 and another operational in 1970, each building containing 20 autoclaves. The workforce for the plant between 1968 and 1984 is estimated at 428. The majority of production workers apparently spent at least six months in the Dryer (bagging) building before moving to the autoclave buildings. In addition to the production workers, there were 12 to 15 fitters in the plant

covering day and night shifts. The plant also contained some 4 or 5 technicians, 4 warehouse staff. For each shift there was also a foreman, production manager and plant manager. Later an additional supervisor post was created. 3 secretarial and administrative staff were on site as were a number of cleaners and canteen workers, a safety officer appointed in the late 1970s and 2 odd job 'men'. On any one shift there would be approximately 35 people on site and there were 4 shifts in the 24 hour cycle.

VCM Exposures at the Plant

Employee accounts of very varied VCM exposure levels include the following figures. In 1970 workers reported some levels of 200ppm in the plant. In 1974 figures of up to 100ppm were recorded in the plant and in bagging and other areas figures of 1000 to 4000ppm were recorded. Some shift foremen were exposed to between 0.1 – 6.5ppm between 1975-1984 with one exposure up to 142ppm. Reactor lead operators between 1974 and 1984 were working in atmospheres where VCM levels ranged from 3.5 to 34.6ppm. Drivers in 1974 loading tankers had TWA VCM levels recorded in their work areas of between 1.8ppm and 9.9ppm.Warehouse staff were working in areas where VCM levels ranged from 10.5ppm TWA in 1975 to 0.5ppm in 1977 with levels dropping to 0.1ppm in the mid 1980s.

A General Municipal Workers Union (trade union) visit to Vinatex in 1981 noted that excursions above the TWA TLV of 10ppm had occurred with 11 excursions at 11.4ppm (GMWU Visit 26 October 1981). Concerns about VCM extractor units on reactors and high level alarms on VCM recovery tanks or rather their absence in the plant were also expressed by the HSE in reports of a visit in November 1979. 1973 VCM was recorded in the plant at airborne levels of 50,000 ppm (Morris 1998) post-1974 Levels of VCM of 3000ppm were recorded in the plant (TUSC Report 1997/8:3)

Health Problems Identified in the Vinatex Plant Through the 1970s and 1980s

In the 1970s a series of 9 gassing incidents were reported in the plant that indicate major problems with systems of work and basic health and safety management in the plant.

Early 1980s: the plant reportedly settled 35 claims for acro-osteolysis. The ex-Vinatex workers support group have details of 31 settled cases which include acro-osteolysis cases, other skeletal problems and also cases relating to respiratory, reproductive, circulatory, neurological effects. 27 claims were settled totalling £857,000. Settlements ranged from £1500 to £100,000.

1984 Norsk Hydro who took over the plant in 1980 when Vinatex, ceased production of PVC and the plant closed in 1986. Drivers previously employed by Vinatex apparently still worked at Staveley until 1991/2. 2 angiosarcoma cases have been reported in Vinatex workers by 1998 (Morris 1998). The ex-Vinatex workers group are aware of 1 definite angiosarcoma case and have come across a report of 1 other. 1 liver cancer case and a number of suspected liver cancer cases are also known to the group.

UK data on the morbidity and mortality of former VCM and PVC workers are relatively restricted, frequently incomplete and often fragmented. Processes if not companies and

industries have moved on leaving many vinyl chloride workers behind with no jobs and concerns about their health. Supposedly some of the major sources of information in the UK on these workers come in the 2 angiosarcoma registers. The HSE kept such a register from the early 1970s until 1994. Problems relating to diagnosis among pathologists of angiosarcoma slides emerged.

The plastics industry set up a voluntary angiosarcoma register of its own initially through ICI in UK and this is also recognised as incomplete (ref). In 1999 the industry register contained 196 cases with an average latency period recorded of 20 years between first exposure and onset of the liver cancer. The shortest latency period was 11 years and the longest was 40 years. These data indicate that the HSE register should have been kept open for significantly longer than it was even with no angiosarcoma cases reported for those exposed after 1974. Those health professionals who deal with the industry register acknowledge that angiosarcoma incidence varies greatly between plants supposedly using the same technologies. This may relate to work allocation and other factors. The industry register apparently has no angiosarcoma cases recorded from Vinatex.

VCM Exposure Levels and Disease

The principal route of entry of VCM for production workers has been inhalation. However, in the past it was observed that 'dermal absorption may be significant during manual reactor vessel cleaning' (La Dou 1997:474). By 1983 occupational physicians in the EU were indicating that employees should have an examination, before started working with VCM, of the lungs, cardiovascular system and liver and they advised liver function tests, tests on hand and finger bones, blood counts and ventilatory function tests (Roi 1983:131-132).

HEALTH SURVEY METHODS AND RESULTS (171 Ex-Vinatex Employees)

The survey, designed and conducted by workers and their representatives, analysed 162 questionnaires from ex-Vinatex workers of 229 identified. Of the 229 identified, 30 are deceased, 8 were uncontactable and may also be deceased. 17 men did not wish to be involved in the study and 3 men came forward after the interview process was concluded. Those participating in the survey were contacted by word of mouth and through articles in the local press asking ex-Vinatex workers to participate in the survey. 5 pilot interviews were carried out and the initial questionnaire was modified. The survey consisted of a pre-circulated work history questionnaire sent out to each interviewee to be completed before the interview. At the interview, the interviewer filled in the health questionnaire. The two questionnaires explored the employees' work at Vinatex, some aspects of their general health and the type or types of job that they had done at Vinatex.

Employment

The starting date of employment at Vinatex was recorded as were the jobs undertaken at the plant during employment, the type and length of time in each job. Some effort was also made to assess what if any harmful chemicals the employee may have been exposed to, how they were exposed, what information was made available on these chemicals, what if any personal protective equipment (PPE) was available. Assessments of PPE effectiveness were made and those interviewed were asked about other factors connected to the job that may have influenced health.

Health

Questions about general health and medication were asked. Specific sections of questions using standard questionnaires from tried and tested questionnaires that have been designed to reduce errors. The cardio-vascular sections have been taken from the Health Survey for England Report of 1992 (Health Survey for England 1994:258-307) , the respiratory sections come from the European Union Iron and Steel survey (European Community for Coal and Steel Respiratory symptoms survey 1987 updating of 1962/1967 questionnaires) and the Mental Health Survey comes from the tool developed by Hanninen and Luukonen (Hanninen et al 1985)

Areas of illness explored covered:

Cardio-vascular disease	Respiratory problems	Raynauds phenomenon
Bone/joint problems	Skin problems	Blood problems
Mental health problems	Reproductive problems	Other problems

METHODS

The health survey used ‘a self-reported illness questionnaire’ with all the associated strengths and weaknesses of that method. The group are also self-selecting and of 428 workers estimated to have been employed at the plant, data exist for 171. The response rate of almost 50% to the questionnaire, after exclusion of those known to be deceased or uncontactable, is excellent but it too does provide only a partial picture of the workforce.

The data analysis has been carried out using standard statistical packages (SPSS and Excel). The questionnaires were filled in and interviews conducted from June 1998 to August 1999.

The number of interviewers used were 10. One interviewer conducted 2 interviews, one conducted 4 interviews, the remainder conducted between 7 and 33 interviews each. All interviewers had previous interviewing experience. All interviewers undertook a one day training session on interviewing skills as well as being issued with guidance and instruction notes. The training assisted interviewers in standardising the interviewing process.

Only a very small number of women – 5 in total - filled in questionnaires as very few worked at the plant: therefore the analysis is restricted to male workers. The analysis provides data about the age of ex-workers, period of time spent working at Vinatex, Information about age, sex, length of time employees worked at the Vinatex plant, and smoking were collected and the relevant multivariate analysis was performed

Analysis of Ill-Health Reported

The study looks at the survivor populations. Ex-Vinatex workers may have died prematurely and so would not be included in the survey results. This would then skew the results to indicate a healthier population at the factory than in fact was the case. Several issues emerge about the nature of the data generated. For instance, the Vinatex workers often came from other and frequently heavy industries especially coal mining. Previous occupations may have contributed towards certain respiratory conditions and this may make data generated on these topics of limited value. Likewise the ex-Vinatex workers are also now older and data about cardio-vascular disease and mental health, in terms of memory etc, will also be influenced by such factors.

Results

TRUST manually recorded the following illnesses contained in the Health Study questionnaire. 162 case studies (157 men and 5 women) were analysed and the results are set out below. Two independent people according to agreed criteria calculated these figures.

113 out of 162 former workers identified as having symptoms associated with Raynaud's Phenomenon. According to the Raynaud's and Scleroderma Association (1999) women are affected nine times more than men. TRUST also found that six former workers had bladder cancer; four have skin cancer; one former worker involved in the interviewing has since died of lung and brain cancer; one had an undetermined cancer ; one had colon cancer and one prostate cancer.

VCM causes acro-osteolysis amongst PVC processing workers. Acro-osteolysis is characterised by bone absorption in the fingers, which become slightly shortened and clubbed (Grainger, Walker, Ward 1979). 41 out of 162 former workers indicated symptoms of Acro-osteolysis. Around 3% to 6% of the PVC workers studied in the 1960s and 1970s had this syndrome. However, the figures analysed by TRUST reveals that 25% of the former Vinatex workers indicated symptoms of Acro-osteolysis.

VCM also causes scleroderma amongst PVC processing workers. The condition is a disease of the immune system causing the skin usually on the hands and feet to become stiff, tight and shiny, thickening of the connective tissue becomes patchy or fibrotic*)*. 35 out of the 162 former workers indicated symptoms of scleroderma**.** Scleroderma affects 20 in every million of the population per year and is three times more common in women than men (Raynaud's and Scleroderma Association 1999.

Other data were analysed using SPSS and produced the following results. Bronchitis is generally defined as having a productive cough for as much as three months each year. On this definition 32% had bronchitis. 48% reported productive cough (i.e. a cough which

produced phlegm), and within this number current smokers were most likely to report productive cough, ex-smokers less so. Only 30% of those who had never smoked reported a productive cough of any kind, and only 20% had chronic bronchitis..

Symptoms of wheeziness showed a similar pattern to those of coughing with the highest levels of reporting amongst current smokers, least amongst never-smokers, and intermediate levels for ex-smokers. There did appear to be a consistent pattern to reported 'abnormal breathing', which was reported more frequently amongst those who had worked longer at the plant.

This pattern was not observed, however, in the reported symptoms of breathlessness. High levels of breathlessness were reported, with 30% of those who had never smoked reporting the higher level of breathlessness (difficulty when walking on level ground). Smoking made less difference to the reporting of breathlessness than to reported productive cough.

Cardiovascular Disease

The workers were asked questions about their history of heart disease and diabetes, and stroke. The reported levels were similar to those found in other studies, and there seemed to be little consistent relationship between the level of reporting of different kinds of cardiovascular disease and length of time working at the plant.

Psychological symptoms and Mental processes

There were high levels of reporting of symptoms related to mental activity and mood. For 10 questions relating to memory, concentration, thinking and tiredness over 45% reported problems, with 77% needing to take notes to assist them. For the four questions taken from a standard method of detecting depression a large proportion of those responding described depressed mood, or, for example, loss of pleasure from things they used to enjoy.

DISCUSSION

Respiratory Illness

The established causes of respiratory illness are workplace pollution, environmental pollution, cigarette smoking, and previous medical history (family, childhood illness, etc). These interact with the effect that older people with exposure to pollutants and cigarette smoke are at highest risk. The levels reported in this survey for chronic bronchitis are in line with those from the Health Survey of England (HSfE). However the results for abnormal breathing and breathlessness on level ground are much higher than those reported in HSfE

Breathlessness

HSFE			
Age	45-54	55-64	
			Vinatex (all)
None	84	72	32

Level 1	11	15	20
Level 2	5	13	48

This is consistent with what is already known about the effects of vinyl chloride monomer and PVC. Breathlessness results from changes in the body of the lung tissue reflected in reported severe breathlessness, rather than from changes in the main lung airways which would be reported as wheezing and bronchitis.

Cardiovascular Symptoms

This section deals with high blood pressure, angina, heart attacks, other heart trouble, stroke, diabetes and other effects. The reported cardiovascular disease is in line with that found in the Health Survey for England and the Sheffield health survey (SHAIPS) when age, sex, and social class are taken into account. While there is evidence for changes in blood chemistry from studies carried out on Vinatex workers and elsewhere, and some evidence of cardiovascular disease in the literature, this survey did not confirm the findings.

Mental Processes

This section includes data on memory, concentration, discussions, feeling upset, irritability, disordered thinking, adapting, hobbies, tiredness, alcohol toleration, air toleration, sadness, pessimism, loss of pleasure, loss of interest, state of mind. The questionnaire used has been used as a screening tool in Scandinavian studies of solvent exposed workers. In a study carried out on solvent exposed workers matched with controls in Sheffield, there was a marked difference between the cases of solvent syndrome and the controls, which paralleled differences in score when carrying out psychological tests. The level of reported symptoms in the Vinatex study is comparable with that in other studies.

While these results on mental processes follow what has been reported in the literature, some caution must be exercised in their interpretation. We do not have standard values for comparison for men in this age group who are no longer working. It is possible that other factors are playing a role in the pattern of reporting. The relationship with length of time worked at Vinatex is not what would be expected if length of exposure was a factor. Reanalysis using period of exposure (before and after improvements in protection of workers were introduced) or intensity of exposure might help to clarify this.

The fact remains that very high levels of psychological symptoms are reported and the reported problems are consistent with what has been reported in the past.

CONCLUSION

Very high levels of reporting, above those expected from comparable surveys, for respiratory and psychological symptoms have been identified. Some of the psychological symptoms may be secondary to unemployment, which is itself a consequence of the long-term limiting illness which the legacy of working at Vinatex. These results are not inconsistent with findings in some of the literature on VCM exposure.

The failure of industry and HSE to follow up and properly investigate the health status of UK workers exposed to vinyl chloride monomer has been very serious albeit not unique in Western Europe. Major questions are also raised about the weak UK control standards for VCM from the 1970s through to the 1990s.

The survey fills in some gaps in our knowledge about the health status now of former Vinatex workers but there are significant methodological limitations. Nevertheless it provides data that has not hitherto been collected or recently explored by either industry or HSE on a similar scale. It is an indictment of both HSE and industry in the UK that these matters have not been more fully investigated and from a much earlier date. Only in January 2000 did the HSE search the HSE angiosarcoma register for cases involving Vinatex workers: this is a remarkable omission. The HSE could not then identify any angiosarcoma cases from the Vinatex plant but found one angiosarcoma of the soft tissue in the HSE study of 428 Vinatex workers that may or may not have been an incorrectly diagnosed liver angiosarcoma. The apparent cluster of bladder cancer cases will be the subject of further analysis.

Further action is needed to address the health needs, research expectations and equity concerns of the former workers. The location of HSE angiosarcoma register should be determined by the ex-employees as well as industry and HSE. Full and complete disclosure of data in appropriate and ethical form should occur of all HSE and company data to the ex-Vinatex workers and their representatives on VCM exposures and industry and HSE knowledge of health hazards from the early 1970s onwards.

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VIOLENCE TOWARDS MENTAL HEALTH NURSES IN ENGLAND AND THE NATURE OF THE POLICY RESPONSE: A FRAME ANALYSIS

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ABSTRACT

Nurses working in services for people with mental health problems are twice as likely to be assaulted as nurses working in general hospital settings (Health Care Commission 2007). The emergence of the issue of violence towards nurses as a social problem has however been accompanied by a contest to date unexamined, between conflicting 'frames' of the problem, which this paper seeks to make transparent. Two distinct 'master' frames are discussed the 'individualising' and the 'co-creationist'. It is concluded that the influence of these frames has influenced the nature of responses to the problem but the recent dominance of the individualising frame is being challenged by the emergence or perhaps re-emergence, of the ideals and values of the therapeutic community.

INTRODUCTION

This paper will firstly, place the method of frame analysis in context as a sub type of discourse analysis whose origins lie in social psychology and with the work of Erving Goffman (1974) before discussing more recent applications of the concept in the social policy literature which inform this study. An individualising frame that locates responsibility for violence primarily within the individual will then be contrasted with a co-creationist frame. Pathology in terms of the origins of violence for the latter is seen as residing in the staff involved, the organisation, the perpetrator and the pattern of their interactions, which are collectively co-created.

Discourse analysis encompasses an influential methodological tradition related to a number of different disciplines ranging from linguistics to ethnomethodology and social psychology (Potter and Wetherell 1994). This study used a subtype of discourse analysis called frame analysis developed by a number of authors since the 1980's including Snow and

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Benford (1992) in their work analysing social movements, Gamson et al. (1992) examining political communication and more recently, by Triandafyllidou and Fotiou (2006) to examine the processes involved in policy making. The concept of frames in the social sciences has a long history. Erving Goffman (1974) contended that we use 'frames' in order to make sense of our life experience. In his description, frames are internal cognitive structures consisting of systems of classification and rules of interpretation. Such frames allow us (Goffman 1974:21) to "locate, perceive, identify and label" the diverse phenomena we may encounter throughout the course of our lives. Framing theory posits that we make sense of our experience on an ongoing basis by continually relating it to patterns, which are already known. This tendency to refer to stable and recurring patterns in order to recognise new stimuli has been confirmed by a number of psychological studies. Heider (1958) affirms that people perceive reality and form expectations with respect to it by linking temporary attitudes with pre-existing stable patterns of behaviour. Thus, diverse new stimuli are interpreted for meaning by being linked to a known and enduring background, which serves as a point of reference.

However, the concept of framing has also found application in the study of social policy. Here, the process of framing is described as involving the selection of some aspects of a perceived reality that in turn, promotes a particular definition of a putative problem, in such a way as to construct a particular causal interpretation, moral evaluation and consequently specific recommendations regarding the type of solution that needs to be adopted (Entman 1993:52). Snow et al. (1986) propose that we can usefully distinguish between two levels of frame that they describe as 'master frames' and 'domain-specific interpretative frames'. Master frames signify meaning on a broader scope and serve to organise sets of 'domain-specific frames', such as those, which both depict and inform how we should understand violence to mental health nurses.

How the available master frames 'organise' the domain specific frame around any particular issue cannot readily be predicted. Two or more, different master frames can coalesce to produce a novel domain specific frame. Further what sometimes occurs is a competition to frame an issue within a given domain in a particular way congruent with one master frame or set of frames, as opposed to another (Snow et al. 1996). It is this position on frames that will be used to inform a critical exploration of the framing process in relation to the 'problem' of violence to nurses working with people with mental health problems.

In the case of workplace violence in mental health the influence of a series of master frames can be identified. First, is the classic 'discourse of deviancy', a frame of some antiquity. Its assumptions are that deviants real or imaginary, are easily identifiable, the reasons for their deviance reside within the individual and social actions to control or punish them are therefore justifiable. Moreover, because such actions serve to clarify the moral boundaries between 'the good' and 'the bad' that must always be maintained, a failure to punish the deviant would be remiss (Leadbetter et al. 2005).

This frame interacts however with those of mental health and mental illness. The frame of mental illness can in certain circumstances absolve a perpetrator of culpability both morally and legally of what would otherwise constitute a crime. However, the possession of a psychiatric diagnosis has never meant that punishment may not play a role in treatment. Control in extremis in contemporary services by means of coercion is often justified by reference to the need to maintain a safe environment (Paterson and Duxbury 2006). However,, the perception of service users is sometimes that coercion is being used to punish rather than enable treatment (Duxbury 2002). The use of systematic punishment to induce

compliance, as a form of treatment was though once orthodox practice (Foucault 2006). The belief that 'fear (*is*) the most effectual principle to reduce the insane to orderly conduct' appalled Tuke (1882:90) however, to assume that such long established discourses no longer exert any influence on practice would be naive. Perhaps instead as Shapiro observes (1988: xi) it is precisely because such discourses are so familiar that they are able 'operate transparently' upon those affected who are effectively blinded to such influences on both their thinking and behaviour (Keywood 1995).

When such older frames interact with more current preoccupations of risk one consequence is the development of a particularly narrow understanding of the sources of risk where only the risks attached to individuals and their behaviour become the focus of examination and action. This fundamental attribution error (Heider 1958) can lead to the exclusion of consideration of risks arising from wider factors whether in the immediate and wider social context. The novel discourse that results can be described as an 'individualising frame' and is unfortunately that which seems to have informed what has been characterised as the 'security' or 'high tariff' approach to violence prevention in health and social services in the UK (Leadbetter et al. 2005). This approach is exemplified in the 'Zero Tolerance' policy on violence adopted by the National Health Service (s) of the UK in 1998 due in part to campaigning by the Royal College of Nursing. This promote intolerance of aggression by service users and/or provide for greater punishment or exclusion for perpetrators.

Snow and Benford (1988) observe that in order for frames to be successful they must either resonate with the sentiments of the population concerned. The individualising discourse with its location of the reasons for deviancy within the individual has several advantages in this respect. Research into the explanations for the violent acts of in-patients suggests a tendency amongst nurses to stress aspects of the service users' personality as causal (Duxbury 2002). However, service user's explanations for violence tend to differ stressing instead the situational dimensions of violence particularly that it was often a response to controlling behaviour by staff (Hinsby and Baker 2004). The apparent preponderance of individualistic explanations by nursing staff for service users' violence in studies may mean that the security high tariff framing of the problem resonated with the beliefs of many practitioners regarding the origins of violence (Duxbury 2002).

The seeming success of the individualising frame may though also stem from the form of the frame it uses to construct the problem of workplace violence. Gamson (1992) argued that three kinds of issue frames delineate how problems are framed. What he terms 'Aggregate' frames effectively define putative issues as 'social problems' but the burden of responsibility for action to resolve the issue is placed with individuals. 'Consensus' frames, in contrast, whilst also defining an issue as a social problem, represent it as one that can only be solved via collective action but leave unspecified who must act. 'Collective action' frames differ in three key respects from aggregate or consensus action. Firstly, they define the problem as one, which is intrinsically 'unjust'. Secondly, 'agency' i.e. responsibility for the problem is placed with an identifiable actor. Thirdly, and perhaps crucially, the frame establishes an adversarial relationship between 'us' in terms of identity as members of the in-group and 'the other' i.e. whomsoever the imputation suggests is responsible for the problem (Gamson 1992).

Evidence of the use of the latter frame is exemplified in the title of the Zero Tolerance resource pack sent to every NHS Trust in England in 1999 (Health Service Circular 199/226). Entitled 'we don't have to take this anymore' the identification of 'in' group and an implied

'other' is clearly evident and an adversarial if not counter aggressive dimension is suggested. In the individualising frame the problem of violence to the worker is defined as an injustice' perpetrated upon an 'innocent' (or sometimes unskilled) victim and responsibility for the behaviour is placed with the perpetrator. Of more significance in terms of social policy the resulting discourse is productive more specifically deontic, in creating an obligation on those charged with protecting nurses from such a threat to address this injustice.

This evoked what appears to have been a search for solutions to this construction of the problem which was found in Control and Restraint, ('CandR') an intensive physical restraint training program developed within the English prison service. The conventional explanation for the extraordinarily rapid adoption of CandR training across mental health services is that it followed the recommendation of an inquiry into the death of a patient while being restrained in Broadmoor high secure hospital in 1984 (Ritchie 1994). However, given the failure to adopt many of the other recommendations of the inquiry and a lack of concern about such deaths outside the special hospital sector over this period attributing causality for what was a radical change in policy to a single event seems highly questionable. As Michel Foucault (1980:114) reminds us, "there are actually a whole order of levels of different types of events differing in amplitude, chronological breadth and capacity to produce effects". Foucault (1991:76) suggests that we should therefore approach the question of the role played by events by means of an analysis of the multiple processes which constitute them, a process he terms "eventalization". The implications of adopting this approach are that what must be understood becomes not only 'where the seed comes from', that is, what event appeared to prompt a reaction in terms of social policy but more importantly 'what makes the soil fertile', that is, why is a particular sector may be uniquely responsive to a suggested initiative at a particular time (Kingdon 1995:77).

From this perspective the adoption of CandR provided a means of responding to growing concerns over the problem of violence towards mental health nurses that was congruent with the dominant individualising frame of the problem. It resonated strongly with the assumption contained within the individualising frame that violence results from individual pathology whether ascribed to madness demanding control or badness demanding punishment (Crichton 1997). The former is addressed in terms of prevention via 'treatment' directed towards goals specified by the service (although the extent and nature of the 'treatment' is not specified) whilst dangerous manifestations of the disorder are managed, via restraint if necessary. The latter is addressed via the deterrent affect of restraint conveniently maximised by the use of 'pain compliance' an integral dimension of CandR as then practised (Paterson 2005).

WHY WAS THERE NO OPPOSITION?

All frames are 'temporally variable and subject to reassessment and renegotiation' (Snow et al, 1986: 476). The individualising frame of the problem was successful at least for a time, not only because of its resonance with internal attributions of responsibility for violence or that it was articulated by means of a collective action frame, but also because it faced comparatively little coordinated opposition. Given the long history in the UK of the non-restraint movement with its emphasis on moral treatment this is puzzling. The reductionist explanations for violence offered by the individualising frame should have been countered by

the discourses of social psychiatry and the insights provided to psychiatry by social psychology and sociology.

Perhaps at least in the UK, this did not happen because these discourses were marginalised during the nineteen eighties and nineties by the dominance achieved by bio-medical psychiatry. Ironically the ascendance of biological psychiatry as *the* dominant treatment paradigm may have been at least in part a response by psychiatry to critics in seeking to reassert its historical dominance by claiming equal status to its oft times distant cousin medicine. Exposed to criticism from within by Szasz (1994) and Laing (1964) and without by sociological studies such as 'on being sane in insane places' (Rosenhan 1973) psychiatry could have sought to engage with such critics, and initiate a creative dialogue. Instead with a few honorable exceptions, it promptly discarded it's former raison d'être psychoanalysis and any pretensions regarding milieu therapy (Pilgrim and Rogers 2005). The dominance by the discourse of bio psychiatry was so complete that it almost led to the demise of social psychiatry and a decades long estrangement by psychiatry from sociology (Pilgrim and Rogers 2005). Consequently psychiatry or at least many services experienced a form of collective amnesia that served to obscure their memory of previous treatment regimes based on moral treatment and the ideals of the therapeutic community (Bloom 2006).

Unfortunately psychiatry in its retreat from the social dimensions of causation was accompanied on its journey over this period by clinical psychology whose dominant paradigms over the period were of behaviour modification and cognitive behavioural psychotherapy. Such perspectives, or rather common misunderstandings and misapplications of them, located pathology almost wholly within the individual. As a result the emphasis in many settings was primarily on ameliorative interventions focused on trying to find solutions to violence within individuals rather than transformative interventions that sought to uncover and address the causes of violence in the social context (Duxbury and Paterson 2005).

The interaction between the individualising master frame and the frames of biomedical psychiatry and cognitive behavioural psychotherapy resulted in the creation of what Michel Foucault (1986) has described as an episteme. Epistemes exercise an all-pervasive influence saturating and governing thinking rather than being held consciously and their power is exercised insidiously by delimiting how we can think about a given issue (Bevir 1999). As a result of the dominance of this episteme the conceptual frameworks offered by alternative paradigm essential if the social dimensions of causation were to be recognised and addressed became devalued in many settings for almost a generation. Sadly, an early if rarely recognized upon casualty of psychiatry's whole hearted embrace of biomedicine was mental health nursing itself (Hunter 1956). Stripped of any pretence regarding parity of esteem with psychiatry, the previous partnership of equals dissolved at least in relation to violence prevention, by the privileging of biological and thus scientific knowledge over the centrality of the therapeutic relationship, nurses became the handmaidens not just of the psychiatrist but of bio-psychiatry.

The result was unfortunate, self esteem diminished, knowledge base devalued and in some settings such as London latterly near overwhelmed by decreases in the number of acute beds and rising acuity and co-morbidity in those admitted to antiquated and understaffed services, nurses retained however their almost complete power over the day to day lives of those they cared for (Patrick et al 1989). This juxtaposition of a lack of power and status in one dimension with almost complete control in another produced a situation eloquently captured in a phrase used by Wardhaugh and Wilding (1993) with reference to a similarly

problematic dynamic in residential childcare, as one of ‘dangerous ambivalence’. All too readily nurses could unconsciously displace their unmet needs for self-esteem, power and control in their professional lives into their relationships with service users.

Where such displacement took the form of over controlling behaviour by staff it increased the risk of service user non-compliance and the likelihood of counter aggression in turn (Paterson and Duxbury 2007). However when repeatedly exposed to violence nurses coping strategies are characterised by avoidance or counter aggression (Maier 1999). These reflect the emotions of fear and/or anger produced by exposure to violence (Colson et al. 1986). Where the dominant emotional response was of counter aggression, control and restraint may have served to facilitate if not legitimate the expression of such hostility. Consequently control and restraint may have chimed not only with how nurses understood the problem of violence but with how nurses felt about the problem or rather its source as they perceived it, in ‘the service users’.

It is though important to recognise that not all settings, services or practitioners adopted the individualising frame That there were many gaps in the dominance of the frame supports Snow et al’s (1986) observations that while we are susceptible to influence by frames we can simultaneously be capable of reflection and opposition to the frames we encounter. Opposition to the dominance of the individualising frame has grown persistently over the last decade representing the emergence or perhaps more properly re-mergence of an alternative discourse that has been described as a co-creationist perspective by Paterson and Miller (2006).

The new/old frame operates from very different assumptions in adopting a focus that extends beyond the pathology of the individual (Bloom 1997). It assumes that a safe environment cannot be created without the active participation of the patients. Violence is seen as arising from the interactions between individuals operating within complex social systems whose interaction gives rise to violence. In this frame the problem of violence to the worker is defined not as an injustice’ but as a failure to adequately understand and address the root causes of violence. Pathology in terms of the origins of violence is seen as potentially residing in the staff involved, the organisation, the perpetrator and the pattern of their interactions, which are collectively co- created. These are of course, the ideas integral to the concept of the therapeutic community and they remain equally valid some fifty years on. Our developing understanding of the impact of exposure to trauma has however served to add emphasis to the need to adopt such principles. As an approach to violence prevention co creationism’s emphasis is on primary prevention in asking what 'kind of human environments we are creating in our workplaces' (Braverman 1999:4). In order for a environment to be truly ‘safe’ it must be physically, psychologically, socially, and morally safe for everyone in the community. The achievement of that level of safety can though only be reached by means of a shared process over time (Bloom, 1997).

Of interest perhaps, is why this counter discourse and the frame it utilises have seemingly been successful after the long standing dominance of the individualising discourse. A number of developments are of particular note each involving research. Research into deaths amongst patients being restrained has contributed to the reframing of such events as part of a potentially preventable social phenomena rather than isolated individual tragedies (Paterson et al. 2003, Blofeld 2003). This has made the nature of the methods used to control behaviour in many mental health services and injuries and deaths related to their use subject to a level of scrutiny previously absent (Frueh et al. 2005). The inclusion of service user voices in research

studies has led to increasing scrutiny of the reasons why interventions such as restraint and seclusion are used because of findings that suggest service users perceive that such interventions are used not to manage dangerous behaviour but more often as forms of punishment (Duxbury 2002). Research into the antecedents to violence in in-patient mental health settings has also identified conflict linked to needs frustration as a common precipitant. This has led to increasing scrutiny of service cultures and staff attitudes and behaviour as key variables in the prevention of violence (Forquer et al. 1996, Whittington and Wykes 1996, Duxbury and Whittington 2005, Estryn-Behar et al. 2007).

Research has also identified high levels of trauma among users of mental health services and has led to demands for services to routinely screen for and treat the multiple potential consequences of trauma including aggression (Jennings 2004). Finally research has demonstrated that multilevel systemic organisational interventions can reduce the use of restraint and by so doing also reduce violence towards staff even where staff believe they neither can be reduced further (Lebel et al., 2004, Schreiner et al., 2004, Murphy and Bennington-Davis 2005). The reduction of violence towards staff as a consequence of efforts directed to reduce the use restraint is of course not a novel observation with such an effect consistent asserted by some of the much earlier proponents of restraint reduction including Conolly (Page 1904).

It may seem that a co-creationist framing of the problem cannot be refuted. The co-creationist perspective framing of violence is though vulnerable to a number of potential threats. It is not an exclusive strategy but an inclusive one, which challenges the categorical differentiation between the mentally ill and care providers that serves to justify the inequalities of power that embedded within the mental health system (Laurance 2003). Lacking a villain the co-creationist frame rejects simplistic moral judgements but this may not resonate with the master frames of our society or the sensitivities of practitioners because it challenges explanations for service user violence that attribute responsibility to character or personality deficits in the service user. If there is no villain there can be no punishment and punishment fulfils important symbolic functions in our society. The individualising frame is not dead rather it lurks in the policy corner waiting for the opportunity perhaps to be provided by an event or events yet to happen, in order to reassert itself.

CONCLUSION

A ‘battle among discourses and through discourses’ (Foucault (1975:x) has been described in relation to how the problem of violence towards nurses in UK mental health services should be framed and the nature of the response determined. In these battles individuals and alliances have strived to construct the issue of violence in particular ways unconscious it appears, of the potential influence of societal master frames to that debate. An awareness of the cultural resources and master frames drawn upon in this debate may not alter its outcome but can at least illuminate one dimension of the conflict. It is though no small matter, that Zero Tolerance was quietly dropped by the English National Health Service as an inappropriate response to violence in mental health services (Department of Health 2004).

This analysis has focused on an examination of the role played by discourses in the policy process rather than that played by national and local policymakers in their struggle

(Bendor 1995). This is not to suggest that such individuals did not exert an influence in the direction that policy took. However, the effect of the episteme suggested was so all encompassing that whilst policy makers may at one level consciously have known why they did what they did at another their decisions were determined by the dominant frame.

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DOES THE UK LOCAL FINANCE IMPROVEMENT TRUST (LIFT) INITIATIVE IMPROVE RISK MANAGEMENT IN PUBLIC-PRIVATE PROCUREMENT?

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ABSTRACT

The UK government introduced the Private Finance Initiative (PFI) and, latterly, the Local Improvement Finance Trust (LIFT) in an attempt to improve public service provision. As a variant of PFI, LIFT seeks to create a framework for the effective provision of primary care facilities. Like conventional PFI procurement, LIFT projects involve long-term contracts, complex multi-party interactions and thus create various risks to public sector clients. This paper investigates the advantages and disadvantages of LIFT with a focus on how this approach facilitates or impedes risk management from the public sector client perspective. Our paper concludes that LIFT has a potential for creating additional problems, including the further reduction of public sector control, conflicts of interest, the inappropriate use of enabling funds, and higher than market rental costs affecting the uptake of space in the buildings by local health care providers. However, there is also evidence that LIFT has facilitated new investment and that Primary Care Trusts (PCTs) have themselves started addressing some of the weaknesses of this procurement format through the bundling of projects and other forms of regional co-operation.

INTRODUCTION

In the early 1990's, the UK government sought to address inefficiencies it believed existed in the National Health Service (NHS). This involved the introduction of hospital trusts and the quasi-market for hospital-based health care to increase the cost-effectiveness of tertiary health care delivery and the introduction of GP Fund-Holders (GPFHs), making them the gatekeepers of funding for their patients and ensuring that funding followed service provision. Additionally there was a belief infrastructure procurement within the NHS procurement would benefit from attracting private sector funding and expertise previously

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unavailable to the sector. Since the government struggled to find adequate funding for basic maintenance, "let alone large scale investment without infringing Treasury limits on the PSBR and financial markets' expectations regarding the long term sustainability of government expenditures" (Clark and Root, 1999), PFI was seen as a way of providing desperately needed upgrades (Clark and Root, 1999; Spackman, 2002). Following the introduction of the Public Finance Initiative (PFI) in 1992, by November 1994 it had become mandatory that all capital projects in the public sector requiring Treasury approval should explore the use of private finance options (Private Finance Panel, 1995) unless it was absurd or unrealistic to do so (Private Finance Panel, 1996; Akintoye et al, 2003). Whilst strongly criticised by the opposition at the time, PFI in various guises eventually became the lynchpin for capital estates reform for the subsequent labour governments and facilitated an increased commitment to the "buy now, pay later" approach which characterises much of the development and management of NHS estates (Clark and Root, 1999).

Among PFI supporters there was an expectation that new approach would attract private sector funds, resources, management skills, expertise and innovation to the provision of public sector infrastructure (Mustafa, 1999). It was also hoped that PFI would prevent many of the issues prevalent in public sector managed capital projects, including over-spend, delays, poor design, high operational and maintenance costs and low residual values (Forshaw, 1999) while introducing more commercial discipline and encouraging value for money (Birnie, 1999).

Whilst the government hoped that PFI would see private sector investment in the public sector increase significantly, in reality this failed to be the case (Clark and Root, 1999). Up until the mid 1990s, PFI failed to produce the levels of investment expected when it was announced, with targets for PFI investment being on average 50 per cent less than planned (Daily Telegraph, 1995). This was in part due to a feeling among public sector clients that they would be overwhelmed by this process, as well as due to reluctance by major private sector players to engage in the process (Asenova and Beck, 2003).

From a risk-management perspective, the implementation of the PFI process brought to light a number of issues which affected the uptake and effectiveness of PFI in the provision of public-sector services. Each of these is reviewed below.

Poor Risk Management (PFI)

Whilst PFI was "not originally devised as policy for managing risk", as Froud (2003) identifies, "risk has emerged as the key feature that legitimates the shift in public services management". Initial guidance on PFI procurement suggested that that not all risks associated with a PFI project should automatically be transferred to the private sector. Rather, appropriate risks should be transferred to the private sector (Lonsdale, 2005) if they were better placed to handle them (Treasury Taskforce, 1997) to ensure "optimal allocation which is assumed to maximise value for money" (Froud, 2003). Since proposed PFI projects often failed to meet Value for Money criteria as embodied in the Public Sector Comparator, the quantification of risks transferred to the private sector often tipped the balance in favour of public-private finance over traditional delivery methods (Pollock, 2002). This, in turn, has led to widespread criticism of the PFI process on the grounds of inappropriate risk transfer (Clark and Root, 1999). Froud (2003), for instance, argued that, because of its size, the State is better

placed to manage risk, while Gaffney (1999) suggested that risk transfer was unlikely to occur in reality as private contractors would seek to protect their income from uncertainty whenever possible.

Whilst it was apparent early on that it was not always possible to specify the precise nature and distribution of risk (Clark and Root, 1999), it would seem that the public sector had particular difficulty understanding risk assessment and management. This was particularly true with regard to risks associated specifically with PFIs, with the public sector even struggling to find consultants who could help them with this process (Private Finance Panel, 1995; Akintoye et al, 2003). In a Treasury commissioned report it was found that "in over two thirds of the business cases for hospital PFI schemes the risk could not be identified. In other cases risk transfer was largely attributed to construction cost risks, which would be dealt with by penalty clauses under traditional procurement contracts" (Pollock et al, 2002).

In 1997, the Treasury Task Force identified seven groups of risk: "design and construction; commissioning and operating; demand (or volume/usage); residual value; technology and obsolescence; regulation (including taxation and planning permission); and project financing". The Audit Commission (1998) later provided examples of generic risk categories associated with a serviced building, including such factors as "delays in planning permission, changes in interest and tax rates, higher than expected maintenance and costs of meeting new statutory requirements" and the risk that "essential public services cease to be available". Given the breadth of these potential risks, it is easy to understand the scale of the learning curve faced by the public sector which had limited, if any, experience in these areas.

Lonsdale (2005) notes that uncertainty is "likely to be a considerable problem in complex contractual situations, especially when supply involves an innovation or constitutes a new venture". This would certainly seem to describe the context of PFI which, for most public sector, was a novel approach for funding and procuring public services (Froud, 2003). Whilst public sector organisation struggled to understand the risks associated with PFI, they were further hampered by a lack of central guidance (Pollock et al, 2002). This resulted in public sector organisations trying to develop their own evaluation criteria. This has been both time consuming and costly, incurring high levels of professional fees (Akintoye et al, 2003). Retrospective reviews of specific projects therefore often noted that some risks had been transferred to the private sector that the public sector was better placed to take. Some of this could have been avoided through an improved knowledge of PFI risks within client teams and a more standardised approach to project and risk management (Akintoye et al, 2003; Asenova et al, 2002).

Lack of Required Skills in the Public Sector (PFI)

Over time it has become evident that local authorities and other public sector bodies continue to struggle to become equal partners in PFI projects (Clark and Root, 1999). This appears to stem from a number of factors. Firstly, the PFI process inherently suffers from asymmetry of information (Asenova et al, 2002). The private sector partners already have all the technical skills required to complete the design, negotiations, construction and management of a new building as they are required to do this on a frequent basis. For the public sector partners, involvement in PFI is often a unique experience that challenges their commercial capabilities. In theory, public sector clients must lead the entire process if they do

not wish to be at the mercy of the contractors; but in reality many clients feel as though they are "walking in the dark" (Akintoye et al, 2003). Asenova et al quote one NHS Manager as saying that "building a hospital is a once in a lifetime experience" (Asenova et al, 2002). Similarly, HM Treasury publications note that skill shortages occurred in the healthcare sector, particularly in areas such as contract negotiation and project risk management (HM Treasury, 1999).

PFI contracts are legal arrangements that contain clauses designed to apportion risk equally between the two parties, the idea being that risks are managed by creating a balanced relationship through mutual dependence. It has been suggested that this dependence creates "incentives to make the relationship efficient and disincentives to behave opportunistically" (Lonsdale, 2005). The government advised public sector bodies entering into PFI contractual arrangements that this should be done on the basis of genuine partnerships aimed at optimising the sharing of risks. According to the Treasury (2003) "where this sharing of risks is done appropriately and effectively, it is the key to ensuring that the value for money benefits in PFI projects are realised". In reality, it has become evident that the public sector does not always have the capabilities or resources required, to ensure that this balance is achieved (Lonsdale, 2005). Considering that the budget of some PFI projects has exceeded £100 million (Spackman, 2002), it is somewhat disturbing that these skill shortages continue to be apparent many years after PFI has been introduced.

Lengthy Negotiations and Complex Contracts (PFI)

One specific criticism of PFI concerns the length and complexity of negotiations. Where projects have involved multiple partners and funding streams, PFI negotiations were renowned for being exceedingly long (Asenova et al, 2002; Akintoye et al, 2003), slow (Asenova et al, 2002) and complex (Akintoye et al, 2003). This has been attributed to a lack of experience on the part of public sector staff who appear to have required lengthy discussions with consultants in order to gain the required degree of understanding of the PFI process (Asenova et al, 2002; Akintoye et al, 2003) and/or lengthy time periods for arriving at decisions among multiple stakeholders (Asenova et al, 2002). Notwithstanding these problems, some research suggests that consultants may have exacerbated this by providing excessive levels of technical detail (Asenova et al, 2002; Akintoye et al, 2003), while some private sector partners were less forthcoming with detail, preferring a 'black box' approach (Akintoye et al, 2003).

Once the bidding process has identified a preferred bidder, as stated above, the negotiations may proceed for many months. Whilst there may have been a number of competitive companies seeking the PFI contract at the bidding stage, later this may not be the case, and the public sector bodies may not have the option of going back to original bidders. Consequently, a breakdown in negotiations would mean not just a repetition of the final bidding stage, but possibly another complete tendering exercise which could delay the project by months (NAO, 1999).

Lonsdale (2005) suggests that the difference between PFI contracts and more traditional government contracting is the general tendency for PFI contracts to contain greater levels of asset specificity and uncertainty compared with traditional contracting. Lonsdale believes this to be attributable to the bundling of services (discussed in more detail in the next section) and

the duration of the PFI contract which increases the asset specificity and degree of uncertainty respectively. Once a buyer has made significant transaction-specific investments they are in a weakened position unless they are able to write off those investments. Even though a buyer may have the legal right to walk away from a contract, the sunk costs of the investments and the cost of switching to an alternative provider may prove to be an insurmountable barrier. Consequently, the buyer may find themselves 'locked in' to the contract and struggling to proceed with the supplier in difficult circumstances (Lonsdale, 2005; Froud, 2003). This may also be true where the supplier threatens an increase to the agreed prices (Lonsdale, 2005). Whilst PFI contracts do contain termination clauses, it has been noted that they may be somewhat academic where there are practical barriers to existing the relationship (PAC, 2003; Lonsdale, 2005; Froud, 2003; Pollock et al, 2002). Gaffney, D. et al (1999) provide an example of this:

> The recent crisis over private finance schemes for the new national insurance and passport agency computer systems (with private sector partners Siemens and Andersen Consulting) illustrate the problems. The Public Accounts Committee notes that the government's refusal to fine the contractors "would result in the risk purportedly transferred to Andersen Consulting under the PFI contract being transferred back to the public sector" (Committee of Public Accounts, 1999). This negates the key justification for the higher costs of the private finance initiative – the transfer of risk and the "efficiency" of the private sector.

Froud (2003) believes that the provision of public services through this type of medium-term contract increases the inflexibility of the public service, as managers are no longer able to make changes and redeploy their staff within and between units, thereby making the State less able to act. Froud claims that this inflexibility, and potentially increased cost, may also be passed on to "other parts of the public sector beyond the contracting organisation". If there is significant change in a product or service originally specified in the contract it will be necessary to change the statement of work provided under the terms of the contract. This argument is closely linked to Lonsdale's (2005) observation that that the supplier may see this as an opportunity to increase their revenue and, if the buyer has become 'locked in', they will be unable to threaten to return to the market (Lonsdale, 2005).

In essence both Froud (2003) and Londsdale's (2005) would suggest that some of the risk management problems associated with PFI are systemic rather than being attributable to temporary skill shortages among public sector clients. This however, does not contradict the observation of other researchers who continue to attribute the slow pace of the negotiations typical of PFI projects to the public sector's bureaucratic attitudes" (Asenova et al, 2002; Akintoye et al, 2003; Stewart and Butler, 1996), prolific regulations (Stewart and Butler, 1996) as well as a (lack of) efficiency and validity of procedures (Clark and Root, 1999).

Structure (PFI)

To "obtain the benefits of (allegedly) superior private sector management skills" (Lonsdale, 2005), many contracts bundle a variety of products and services that will be managed and coordinated by the primary contractor. This 'bundling' typically facilitates off-balance sheet treatment (Froud, 2003) but it also increases the asset specificity and

uncertainty as it brings together a number of different client requirements within one contract (Lonsdale, 2005). The PFI process often requires private sector partners to price their facilities management services in a vacuum during the bidding process (Akintoye et al, 2003). It also means that the supplier is involved with many aspects of the client's business and, consequently, it becomes more difficult to remove them even if the buyer has legitimate grounds under the terms of the contract. The purchase of full-service contracts poses further problems, as it requires clients to define the quality of service they expected. Without the required skills and experience to do this effectively, this can give rise to lengthy post-contract disputes (Akintoye et al, 2003).

The financial structure of PFI is very attractive to the government as they obtain the new infrastructure with minimal initial financial cost (Clark and Root, 1999; Spackman, 2002). However, this places a financial burden on the supplier who must then enter into lengthy contracts with the public sector bodies to recoup their investment (and increase their returns). Given the duration of the contract, it is necessary for the terms of the contract to be relatively vague and there is an expectation that the terms will be renegotiated at some point (Lonsdale, 2005). However, as already stated, during these renegotiations, the supplier is likely to have the upper hand knowing that the public sector body is unable to go back to the marketplace. With regard to risk management, this means that the public sector client faces undue burdens during both the procurement and the post-contract-completion phase.

Cost (PFI)

When compared to projects purchased via traditional procurement methods many PFI projects involved higher purchase costs (Akintoye et al, 2003; Akintoye et al, 2003). This applies to the health sector in particular, where, in a 1996 survey of 202 NHS Trust Chief Executives, only 17 per cent believed that PFI would be cost-effective in the long term (UNISON, 1996). The same survey noted that even where a PFI project was shown to provide Value for Money, there was still a question of affordability as the hospital trust had to pay rent for the new facilities for the entire tenure of the contract which gave rise to a long-term affordability gap (UNISON, 2002).

Interestingly, private sector PFI participants have also noted that PFI, as a procurement process, imposes significant costs and risks on them. A series of interviews with private sector partners identified concerns over the high bidding costs they faced when competing for PFI contracts which were largely attributable to the cost of consultancy and legal services (Akintoye et al, 2003; Asenova et al, 2002). Moreover they noted that establishing and maintaining a consortium came at added cost and required time and effort (Akintoye et al, 2003). For the private sector PFI projects, moreover, often come with a high opportunity cost, since bidding for these contracts required greater efforts and resources to improve the chance of success, which could have been utilised for smaller and more numerous projects (Akintoye et al, 2003). When queried about the cost of PFI, private sector partners therefore noted that PFI bids placed a significant financial burden on them, which had to be recouped on consecutive projects (Asenova et al, 2002).

Notwithstanding the concerns of the private sector, there is evidence that the bidding process has placed significant demands on the resources of the NHS Trusts. Thus, the aforementioned 1996 UNISON survey notes that 76 per cent of NHS Trust Chief Executives

believed that the costs of preparing PFI bids were excessive (UNISON, 1996). There are also concerns that where a company becomes the preferred bidder, they may be in a situation where the public sector is 'locked in' and they can use this leverage to raise their prices (PAC, 2003).

Further concerns about the cost of traditional PFI projects have arisen in connection with the issue of project refinancing. After a project has been commissioned, banks may be willing to refinance for a longer term at a lower rate. Refinancing increases the expected dividends which will accrue to the shareholders. This has raised concerns about fairness to the taxpayer and in particular the need for refinancing gains to be shared fairly with the public sector client (Asenova et al, 2007; Spackman, 2002).

Building Quality (PFI)

One of the expectations associated with the involvement of private sector partners in PFI projects was an improvement in both the design and quality of buildings in the NHS estate. The Commission for Architecture and the Built Environment, the Government's architectural watchdog, however, has raised concerns about the quality of design in PFI schemes (UNISON, 2002). Sunand Prasad, Commissioner at the Commission for Architecture and the Built Environment) claimed that "There is a legacy of sub-standard buildings in primary care and we are still, tragically, constructing buildings in PFI that are not buildings to be proud of in the future" (Davis, 2002).

Whilst some of the issues stem from the designs put forward by the architects, some blame has been laid with the public sector who, the private sector partners claim, have put forward either unclear or unreasonable demands which subsequently lead to delays and mistakes (Asenova et al, 2002; Akintoye et al, 2003). Notwithstanding this debate, there is also a strong possibility that risk averse attitudes among private sector investors in PFI projects have militated against the adoption of innovative design solution.

LOCAL IMPROVEMENT FINANCE TRUSTS (LIFT)

PFI in the health service was initially conceived as a means for procuring new hospital infrastructure for the health service. More recently, there has been a growing recognition that similar improvements were required in the primary care sector. However, since GP-owned premises are usually relatively small, their procurement or refurbishment does not typically represents the type of project that would appeal to private sector PFI investors. In response to this issue, in 2001 the Department of Health (DoH) introduced its new Local Improvement Finance Trust (LIFT). A key component of LIFT is an exclusivity clause giving the successful LIFTCo the right to build all primary care premises for a Primary Care Trust (Aldred, 2007). As a consequence, the LIFT process removes the need to go out to tender for construction projects in the future as all facilities can be delivered by the same local LIFTCo (Ballantyne, 2005; Little, 2006). It is assumed that this ensures good quality bids for relatively small capital schemes and can save on bid costs (Ballantyne, 2005). However, the House of Commons Committee of Public Accounts identified that

> For the LIFT model to work efficiently there needs to be a continuous flow of developments. The LIFTCo is intended to operate as a local property development business with overhead costs spread over a number of projects. Given the cost to the local health economy of developing LIFT buildings, and the long term funding requirements, there is a risk that a continuous flow of projects may not be taken forward. If so, the model may not achieve the expected benefits(House of Commons, 2006).

But ignoring this possibility, is there evidence that LIFT can address the risk-management related shortcomings of PFI? The following sections address each of these issues in turn.

Poor Risk Management (LIFT)

In interviews with members of public sector bodies undertaking LIFT projects, Aldred (2008) noted that they believed that private sector companies, "in particular banks", were highly risk averse and suggested that "the public sector may not get good value for money when attempting to transfer risk to the public sector". The Public Accounts Committee (PAC) recognised that the returns for LIFT were perceived to be very high in relation to the level of risk assumed by the private sector partners, a fact confirmed by Holmes et al (2006) who felt that "contractors involved in the LIFT process are making a greater return on their investment than the much-criticised PFI schemes". However the PAC argues that this may have been the case in the early schemes "because of perceived greater risk associated with the newness of the schemes, and uncertainty over the pace of future developments" (HoC, 2006). This view has been confirmed by the NAO (2005) who noted that the returns should reduce over time as learning curves are overcome.

Notwithstanding this expectation, criticisms are still being voiced with regard to the risk premium achieved by LIFT companies, with UNISON (2006) claiming that "the projected LIFT rate of return of 15.1% on average compares with 8-9% for traditional third party development – a lot of extra profit given that a PCT may pay around £1 million per year or more to lease each LIFT health centre". Others, like Dawson (2001) would argue that a 15% return should be considered standard for a low-risk, privately financed project. Overall, there appears to be little agreement as to how private sector companies involved in LIFT projects should be rewarded for the risk of their investment. As of now, the going rates of return for LIFT projects appear to have ensured adequate market interest from the private sector, but there is every possibility that this has been achieved at the cost of excessive risk premia.

Lack of Required Skills in the Public Sector (LIFT)

Whilst the Primary Care Trusts have little, if any, experience of property (re)development and management, the consultants required to assist them with those critical skill sets (Hines, 2003) have little, if any, experience of health care and special requirements in terms of design and specifications. In their study, the NAO (2005) found that PCTs found the development of plans understandably "complex and time consuming". According to Holmes et al (2006) this "inequality in the size and expertise of the negotiating parties has given the upper hand to the

contractors when discussing technical specifications and operational arrangements". To try to overcome this, the PCT requires a project team that is adequately resourced with the appropriate skills and management/leadership support (Hines, 2003). Although this may seem a basic requirement, according to the NAO (2005), 56 per cent of PCTs felt that they did not have sufficient resources to complete their project efficiently. Whilst some authorities provided centralised resources to assist with this process where they had several concurrent LIFT projects, other authorities were slower in providing this support (Ballantyne, 2005). Like the public sector bodies procuring facilities under the PFI, it would seem that the PCTs struggle with developing the capabilities necessary to enter into the required bilateral contracts and partnerships with the private sector.

Lengthy Negotiations and Complex Contracts (LIFT)

There is evidence that the bidding process creates particular difficulties to all parties involved in LIFT procurement. Andalo (2003) noted that LIFT requires the submission of detailed plans very early in the process which significantly increases costs for potential bidders. Gaining sign-off is also perceived to be a "pretty painful process" (Sansom, 2007). Little (2006) notes that for one super surgery "the planning took several years" and for one LIFT project Parker (2006) claimed that the process lasted for two years:

> Three consortia were picked to bid, one dropped out halfway through. It took six months for the LIFT to get a preferred bidder, then a year until financial close.

Consequently, some individuals involved in the process have queried whether the process could be streamlined and whether the front-end planning costs could be reduced as they current act as a deterrent (Meara, 2001).

LIFT "represents a shift in the way governments contract with private firms: from short-term, discrete contracts, to long-term, complex and open-ended contracts" (Aldred, 2007). Such contracts are inherently complex, and perhaps unsurprisingly, a UNISON report (2006) has suggested that "The extra layers of bureaucracy diminish the ability of NHS directors and managers to control the services provided and make it still harder for patients and staff to make their voices heard".

Negotiations with local health care providers seems to have taken longer than expected with varying degrees of success in gaining buy-in to the process (NAO, 2005). Even when the buildings are occupied, health care professionals working within LIFT buildings have noted that the terms of the contracts make it difficult and expensive to undertake minor alterations to the property once it has been completed (HoC, 2006) as "the lease agreement states that tenants can only do so with prior consent of the LIFTCo, but the time delay and bureaucracy involved in getting LIFTCo approval often causes frustration".

The scale of some combined LIFT projects means that companies bidding for the work must go through a detailed procurement process governed by European legislation. This means that a bidding company must have the requisite skills and adequate resources not only to complete the job, but also to develop and fund expensive, and potentially unsuccessful, bids (Hudson et al, 2003; Holmes et al, 2006). Holmes et al (2006) suggest that submitting a bid may cost an organisation between "£500,000 and £1 million, with only a one-in-three

chance of success". Consequently, some smaller developers are unable to compete and are squeezed out by the large development companies (Hudson et al, 2003). However, these larger, often national, companies often have higher overheads which can be a significant factor in the overall construction costs of the schemes (Hudson et al, 2003; Holmes et al, 2006).

Some private partners consider the pressure of the bidding process as "too onerous"; with one company Managing Director stating that "I think that the selection process is asking too much. Originally we had been asked to develop 11 schemes over two months. We managed to compromise and agreed on six, but this is still a huge amount of work bearing in mind that one scheme alone was worth £12m" (HD, 2003). This Managing Director believes that the selection process should be refined so that the preferred bidder is chosen on the design approach and track record rather than the actual design (HD, 2003). Another developer is quoted as saying "the process is very lengthy and it puts pressure on medium-sized organisations. You can't go forward to the next bid" (HD, 2003).

Given the duration of the LIFT negotiation process, and the cost involved, it would seem likely that the public sector bodies would be reluctant to withdraw from the process and return to the marketplace. Consequently, like PFI, LIFT may well place the PCTs at risk of becoming locked-in to the process and committed to the preferred bidder irrespective of any decline in their relationship.

Structure (LIFT)

By grouping a number of projects together and including the long-term operation and management of these facilities, the scale of each initiative is increased considerably, making them viable and attractive to private investors (Hudson et al, 2003; Holmes et al, 2006; NAO, 2005). One example of this is a project where a company is providing design services on a range of schemes forming part of a £125 million programme to deliver over 40 health care centres (HD, 2006a). Another project will provide nine new healthcare centres, a 72-bed care home for the elderly, a new HQ for the lead primary care trust as well as additional facilities in the first 18 months (HD, 2006a). Other examples include an integrated health and leisure scheme in Burnley where an eleven storey building of 12,600 sq. m. housing a health centre shares a common entrance and reception with a three storey, 5,000 sq.m. leisure centre. In Knowsley, a new LIFT centre will accommodate three GP Practices, council services, a library, a treatment centre offering extended hours and will facilitate local access to a range of new health services including a cardiac clinic. Similarly, the new Halewood Health and Social Care Centre is contributing to complete town centre regeration and, in addition to extended clinical services, will offer a café, access to housing trust and town council offices, a library, post office, Citizens Advice Bureau and community meeting rooms.However, as stated earlier, bundling can also increase the risks associated with asset specificity and uncertainty. In health care, a PFI contract is typically with a single Trust for one building and the services contained within it. However, under LIFT - as the examples above demonstrate - the contract is often for multiple buildings with many tenants who may have competing demands.

As would be expected, the financial structure of LIFT is very similar to that of PFI. As already stated, by bundling various smaller projects into one contract, LIFT increases the

value of the contract to make it attractive to investors. This then replicates PFI by placing a heavy financial burden on the suppliers who must enter similar long-term contracts with the public sector to recoup their investment. Although, like PFI, the private sector has the benefit of knowing that it would be very difficult for the public sector to withdraw from the contract once they are committed.

Cost (LIFT)

The funding mechanism behind LIFT has been described as "very complicated" (Tyndale- Biscoe, 2003). With the current lack of any form of evaluation, it is understandable that costs associated with the LIFT process are being questioned, from initial set-up (Tyndale-Biscoe, 2003), fees payable to Partnerships for Health (NAO, 2005), and operating costs (Comerford, 2004) to the rents being charged to tenants (Holmes et al, 2006). The House of Commons (HoC) Public Accounts Committee has stated that "Primary Care Trust accommodation spending on patients registered with GPs in a LIFT development is up to eight times higher than total primary care spending on accommodation. The difference mainly reflects the cost of providing new, high quality and purpose built buildings" (HoC, 2006). Given this analysis, it is understandable that the Chairman of this committee argued that

> What we really need to know is whether the expected benefits to patients justify the cost of using LIFT to provide the new facilities. Providing new, purpose-built buildings for GPs and other primary care services is obviously going to be more expensive than carrying on with older premises. (Guillochon, 2006)

In an interview with a mental health trust director, it was revealed that one financial institution had imposed insurance charges of more than double the usual rate, and these costs had been passed on to the NHS organisations involved (Aldred, 2008). Others perceive LIFT as being effective but costly and drawn out (HD, 2006b), suggesting that these two characteristics will prevent the public sector from walking away from a contract if they run into difficulties.

In the past the NHS, and individual GPs, could choose to reduce immediate expenditure by deciding to postpone building maintenance, or the replacement of equipment. With the advent of LIFT this no longer remains an option as all maintenance now falls under the remit of the LIFTCo contract and the PCT will automatically have a share of these charges routinely included in their fees (Dawson, 2001). Similarly, whilst PCTs and GPs may have chosen to expand or refurbish premises on a piecemeal basis, with LIFT new buildings are delivered in entirety committing the PCT, and their tenants, to their maximum rent immediately with no potential for any phasing (Dawson, 2001). Both factors are likely to raise overall costs but there is also a possibility that they will contribute to higher levels of maintenance and higher residual values.

Building Quality (LIFT)

The implementation of LIFT has kick-started the regeneration of primary care premises on a major scale. For example, in Merseyside alone it is envisaged that there will be 30 schemes with a total value of £100 million (Burton, 2004). Given that many GP practices were housed in poor accommodation with only 40% of premises purpose built, and almost 50% in either converted shops or former residential buildings (Montague, 2004), the government has high hopes for LIFT-built premises. However, in the main, there is no evidence that this has been the case. One author goes so far as to state that "LIFT as a vehicle, is not necessarily producing very much better buildings. Generally speaking, they are mediocre at best" (Simpson, 2007). Peter Wearmouth, chief executive of NHS Estates, identified a lack of innovation in design and said

> We are still designing buildings that look the same as they did 30-40 years ago. We still have waiting rooms and consulting rooms, but society has changed. Patients are no longer submissive yet we build architecture that is submissive.(Davis, 2002)

Mathieson (2003) confirms this view by describing one proposed centre with five stand-alone GP surgeries, each with their own waiting room. Even Lord Hunt, Ministerial Design Champion is quoted as saying "It is striking how unambitious the health service has been in the quality of the design of what it produces" (Davis, 20028). Prasad supported the aims of the NHS Achieving Excellence in Design evaluation Toolkit, intended by NHS Estates to raise the general standards of design in the NHS building programme, but conceded that it would not 'produce genius designs' (Davis, 2002). Whilst this lack of "flair" was perhaps understandable during the first wave where the impetus was to get the first projects completed (Parker, 2006), it is less acceptable for these issues to characterise later projects.

Designing for a health care market was something new for most architects and design companies (Holmes et al, 2006) and seems to have posed some challenges. These challenges included the need to take into account the "unique aspects of each centre such as the acoustic features for those which had audiology departments, the need to develop bespoke characteristic entrances to each site" (HD, 2006) as well as the security concerns of staff (Holmes et al, 2006). Whilst it was recognised that the health service did not "want to make the same mistakes as we did in the 1950s and 1960s" when "we built health centres, which are now unloved buildings surrounded by security fences and covered in graffiti" (Andalo, 2003), some initial designs were likened to 'car show-rooms' or 'prisons' by lay stakeholders (Holmes et al, 2006).

Whilst the multi-disciplinary, open-layout approach to working in some new LIFT buildings has created a "sense of community spirit" that has been well received by some (Gilbert, 2005), it has also created problems. For example, in one location the creation of a centralised reception area for four physician practices has reduced patient privacy as any discussion with the medical secretaries can be easily overheard (Gilbert, 2005). There have also been basic oversights, such as the lack of a patient call system so doctors must leave their rooms to call in their next patient, insufficient car parking spaces and a common alarm system that prevents GPs from calling in to their practice to work out of hours (Gilbert, 2005).

The LIFT process is credited with attracting national construction and design teams (Holmes et al, 2006.) and for facilitating attention to detail, such as the creation of a design

with features to maximise light and ventilation (Montague, 2004). However, bringing this "sophisticated design expertise" into the procurement process also brought negotiation teams into the bidding process who "used this experience to drive a hard bargain with the PCT teams for whom each negotiation was a first" (Holmes et al, 2006). Today private sector partners claim that they are "on the hook" to deliver "decent buildings" that are "affordable", "efficient" and "good-quality" whilst being "architecturally-striking civic landmarks" (Sansom, 2007). At the same time there are economic incentives for the private partner to design and build in a way that will minimise costs (Dawson, 2001). This is related to worries that LIFT will inadvertently lock the health service may into inflexible contracts for poorly constructed building with high operating costs for the next 25 years (Paxton and Lissauer, 2000).

NEW ISSUES CREATED BY LIFT

According to the literature, the LIFT scheme seems to replicate many of the problems associated with the PFI procurement process. In addition there is some evidence that, as a significant modification of PFI, LIFT suffers from specific new difficulties.

Control

Whilst with PFI the public sector retains responsibility for deciding on the public sector services to be provided, the quality and performance standards of these services, and taking corrective action if performance falls below expectation" (Akintoye et al, 2003) the same is not true for all LIFT projects. New language in LIFT contracts authorises some LIFT companies to "privatise clinical services in LIFT and non-LIFT buildings" by getting them to "engage private medical companies to provide GP services, or agencies to provide district nursing services" (UNISON, 2006). Assuming that LIFT companies do engage others to provide these services, there are fears that such deals would be "shrouded in 'commercial confidentiality'" and embedded in highly complex, long-term contracts making it impossible for others to intercede, even if public safety was at stake (Aldred, 2005). There are also concerns that the planning function of the NHS will be further eroded and allowing the LIFTCos to determine how, and by whom, service will be delivered (Aldred, 2005). Hellowell (2004) quotes Brian Johns, chief executive for Partnerships for Health, as saying:

> The department is not yet clear on the best way to take this forward. It could be that a new-wave LIFT company would be expected to build clinical services into its delivery model – perhaps even taking financial risk on clinical outcomes as in the elective care programme. More likely, LIFT companies would be expected to procure clinical services such as diagnostics and out-of-hours services as part of the supply chain. Interestingly, this is not an innovation that existing private sector players in LIFT are keen on.

Similarly David Toplas, Chief Executive of Mill Group, a prominent investor in the LIFT programme, believes this would "make many people think again about their involvement in LIFT" (Hellowell, 2004).

Under current contractual arrangements, LIFT companies can determine which private businesses are able to move into their buildings. This is of some concern to the GPs. As one GP noted in an interview with Dix (2001), they did not want to see a "McDonald's next to the waiting room" as had already appeared in some NHS hospitals (UNISON, 2006). Some LIFT project managers have negotiated the right of veto to ensure that the public sector partner can determine who is allocated a tenancy agreement. In one such project the co-ordinator explained that other complementary shops and services could rent spaces on the site, such as social housing related activities, opticians, dentists and pharmacies. They may also allow third party revenue generation from private businesses such as "a veterinary practice, but not a tobacconist. We wouldn't have betting shops, but retail outlets complementary to health might be accepted such as health food outlets" (Mathieson, 2002).

It is recognised that the public sector will be forced to consider how the profitability of new premises can be maximised whilst enhancing the services available to the local population (Aldred, 2007). However, it may be hard to ignore the fact that "The more professionals you cram into a one-stop shop, the more profitable the site" (Andalo, 2003).

Conflicts of Interest

In an NAO study, two thirds of Primary Care Trust Chief Executives or Finance Directors had been appointed to act as public sector directors on their LIFTCo (NAO, 2005). In their employment contracts these individuals have a duty to protect the interests of the PCT, such as minimising the costs of purchasing services from the LIFTCo. However, their new roles with the LIFTCo would require them to act in the interest of the LIFTCo board, including maximising profits for the shareholders. This could create a potential for conflict of interest (Unison, 2006; NAO, 2005). There are similar concerns over potential conflict of interest for GPs who become members of a local LIFT Company and who are required to act in the best interest of their patients (Mathieson, 2002). The King's Fund (2001) notes that whilst the private sector will be "seeking to develop sites with profitable complementary uses… the public shareholders will be seeking to ensure good locations and a good mix of (non-profit making) users".

Similarly, the recruitment of independent non-executives to Chair the PCT and strategic Partnering Boards has proved difficult for many LIFT areas (NAO, 2005). Whilst it is recognised that there is a need for the board to have the requisite skills to protect public interests, in practice this has resulted in the recruitment of individuals with conflicting interests. In one third of the NAO case studies the Chair of the Strategic Partnering Board was a local stakeholder in LIFT (NAO, 2005) who could clearly have an influence on the bidding process (Tyndale- Biscoe, 2003).

Use of Enabling Funds

To facilitate the start of LIFT projects, the Government made 'enabling funds' available to the projects to "remove obstacles to a project going ahead by, for example, purchasing sites or releasing GP practices from negative equity" (Hines, 2003). These funds could also be used to reconvert primary care premises back into residential premises in order to make them

more attractive to the market and easier to sell if the GPs were prepared to relocate into LIFT premises (DoH, 2000). These funds are "not automatically refundable". However, in the limited guidance provided by the Government, it was stated that "there may be circumstances in which the Department would be keen to reclaim funding to enable it to be recycled into further LIFT developments" (NAO, 2005). The NAO go on to state that one third of project managers were uncertain as to how to use the enabling funds, leading to "variation" in usage (NAO, 2005). The NAO also notes that as of January 2005, "no funds have been paid back to the Department. This has prompted a review of the efficiency of how funds are used and recycled".

Whilst the LIFT process was supposed to reduce the involvement of the PCTs in the construction and day-to-day management of the buildings, it would seem that they are still required to take on the initiation and management of revenue contracts, including undertaking "all the leg work, paying solicitors' costs, accountants and consultants when they set them up" (Comerford, 2004); costs which Comerford claims are higher than those under the previous system of fixed cost or notional rent. Whilst this may be done using the enabling funds, it is still an additional cost in the process.

Revenue

Rental income has, understandably, been a consideration of developers given the significant opportunities for revenue raising (Paxton and Lissauer, 2000). Some have designed and built more traditional GP surgeries, preferring GP stability and steady rental income over multi-use facilities with "more risky tenants" (Mathieson, 2002). It is interesting to note that at one LIFT project, the LIFT coordinator has chosen not to discuss rents with its GPs as:

> It does not want them to become alarmed over figures that are still being discussed: the bidders have put indicative rental figures in their bids and we are in negotiation with them over those figures (Dudman, 2003)

This suggests that the rent could be considerably higher than the GPs would anticipate. Holmes et al (2006) describe the major concern over rents to be paid by tenants of LIFT buildings by stating that "there is a perception that the higher costs of LIFT, compared to current rent payments, outweighs the benefits of new, purpose-built premises".

UNISON (2003) notes that LIFT companies have to pay back the capital borrowed to fund the development, pay to maintain the buildings and must still make a profit for investors; and that all of these costs must be reflected in the rents charged to the PCT and other tenants. Holmes et al (2006) note that there are hidden costs associated with unsuccessful bidders which need to be "built into other rounds". It is not surprising that the PCTs are being charged a higher rent than their previous market-rate cost-rents which, according to Comerford (2004), amounts to an eight to ten per cent increase.

Obtaining tenants for all LIFT spaces has not been as straightforward as it may be perceived. Some GPs, including those approaching retirement age, are not in a position to sign a 25 year tenancy agreement. PCTs can take over a head lease with the developer and then sub-let to GPs or other tenants on a shorter-term basis; an option which may be more

attractive to practitioners (Paxton and Lissauer, 2000; Unison, 2003; Aldred, 2007) including those who wish to work in an inner city location or to obtain new skills before relocating elsewhere (Sansom, 2007). However, this leaves the NHS at risk of GPs either leaving or defaulting (Aldred, 2007; Aldred 2008) or coming to the end of their lease and the PCT being unable to find a replacement tenant (Unison, 2003).

These concerns have been examined by Aldred (2007) who interviewed a number of dentists, pharmacists and local authority representatives. Holmes (2006) goes on to say that "In the case study area the rent charged for the new LIFT premises is in the order of £210/m2. Similar, if not superior accommodation provided by the third party procurement is in the region of £160/m2. When a comparable facility management package is added, the rent from a third party developer will be approximately 175-190/m2. In real terms, the facilities provided are expensive when compared to market rents in the locality". For this reason it is suggested that local authorities and allied health practices, including pharmacies and dentists, have chosen not to rent spaces in the LIFT buildings, preferring in some cases to rent retail premises adjacent to the doctor's practice at a "considerably" lower rent (Holmes et al, 2006). The reason pharmacies in particular may not wish to relocate into a LIFT building was identified by the NAO (2005) who stated that, whilst primary care providers such as dentists and doctors receive some automatic reimbursement for the rent paid for primary care premises, the PCT determines whether a pharmacy is similarly classified. In the main pharmacies tend to be considered a business and as such will be expected to pay full rent for their space. As the NAO (2005) identifies that pharmacies are "likely to be the most significant source of third party income" which can be used to "plug funding gaps and reduce the rent levels paid by other tenants", pricing them out of the market would seem to be a short-sighted approach. This may be why alternatives such as cafes, vending machines, internet training facilities and complementary therapists are now being encouraged to locate within the space. There is evidence that in order to encourage healthcare professionals to relocate into LIFT premises, some PCTs have now even agreed to subsidise rents (NAO, 2005).

CONCLUSION

Whilst it is evident that the PFI process had inherent risk-management issues, there are strong suggestions that the LIFT process has not fully addressed these. It would seem that the public sector is still struggling to identify the risks associated with a PPP project. They still do not appear to have the resources required to be on an equal footing with their private sector partners and to enable them to undertake their part in the procurement process efficiently and effectively. There are also ongoing concerns over whether using some form of risk-transfer mechanism through a contract can truly protect the public interest, especially given the difficulties encountered within the public sector when trying to identify risks in the first place.

If the literature is correct, LIFT would seem to have created additional problems including the further reduction of public sector control, conflicts of interest, the inappropriate use of enabling funds, and higher than market rental costs affecting the uptake of space in the buildings by local health care providers. Furthermore, there are ongoing concerns about the high costs of the bidding and procurement process and the complexity of the contractual

negotiations and arrangements. Some of these problems have been addressed by individual PCTs who have engaged in a bundling of projects and/or partnerships with other PCTs in the procurement of LIFT projects and the creation of LIFT companies. While these measures are likely to reduce transaction and bidding costs as well as having a potentially positive impact on the Value for Money, they also increase the possible exposure of PCTs to lock-ins and their vulnerability to private sector financial failure. Overall there is therefore an urgent need for PCTs to gain awareness and skill in the management of the unique risks this form of public-private partnership poses.

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ASYMMETRIC RESPONSE: EXPLAINING CORPORATE SOCIAL DISCLOSURE BY MULTI-NATIONAL FIRMS IN ENVIRONMENTALLY SENSITIVE INDUSTRIES

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ABSTRACT

This paper examines the determinants of corporate social disclosure (CSD) using a sample drawn from environmentally sensitive industries. It extends the traditional literature in two respects. First, it is international in scope, examining the accounting disclosure responses of multi-national companies to the pressures implied by the nature and scope of their operations. Second, variables measuring political risk and social development are developed so that these pressures can be measured, thereby introducing new dimensions to the literature. In common with previous studies, financial risk, size and other control variables are included. The relationships are tested econometrically utilising regression techniques not previously applied in the CSD literature but nonetheless more generally appropriate when using count dependent variables. Our results suggest that managers feel an unequal sense of responsibility to different constituencies and their disclosure priorities are determined by stock market accountability, lobbying power of their domestic audience and the political risk of their activities rather than the impact of their activities in countries of operation.

INTRODUCTION

Why do large multi-national firms make corporate social disclosures (CSDs) in their annual reports? Two possible hypotheses are explored in this paper. First, the 'benign' managerialist hypothesis that the firms are essentially enlightened oligarchies, which

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recognise their social and environmental impact and their associated responsibilities and make appropriate disclosures. At the centre of this argument is the notion that CSD arises from an ethical code which is espoused by the senior management of the firm and is transmitted 'top down' as a matter of policy. If the benign hypothesis were true, it would be expected that the CSD response would be proportionate to the international scope of the firm's activities.

An alternative second hypothesis is that firms have no such ethical code and that managers merely respond to market, social and political pressures when making CSDs. According to this hypothesis, CSDs reflect differential political, regulatory and lobbying power in different countries. Where these powers are the strongest, the firm makes greater CSDs in response, notwithstanding the objective level of environmental impact in that country. Where powers are weaker, for example in unstable and underdeveloped countries managers face less direct pressure to make CSDs. Actual disclosures may in these circumstances be aimed at the governments and public where the corporation is domiciled, particularly where political, regulatory and lobbying systems are well-developed. If this is so, then managers are motivated to make CSDs as an 'asymmetric response' to the asymmetric power and influence produced by the ownership of resources and differential patterns of regulation.

Such an asymmetric response hypothesis is suggestive of two further detailed relationships. First, CSDs, like other accounting disclosures, are responses to the requirements of shareholders. As a powerful interest group, shareholders demand, and managers supply, non-financial as well as financial information as part of a risk management process designed to mitigate political risks. Consequently, a second relationship is that CSDs will be made for the benefit of the domestic population rather than for the benefit of populations impacted by the firms' overseas operations. A corollary is that CSDs inculcate a sense in domestic populations that their domiciled corporations are much more socially responsible than they actually are.[1]

It should be noted that in setting up these hypotheses, the study differs from previous theoretical literature in important respects. The next section outlines these differences and reviews the prior empirical literature. Section three sets out the data and model to test the benign and asymmetric response hypotheses. Section four analyses the results. Section five draws conclusions and discusses the implications of the support for the asymmetric response hypothesis.

PRIOR STUDIES OF THE DETERMINANTS OF CSD

The purpose of the paper is to conduct an empirical test of the null benign hypothesis and the alternative asymmetric response hypotheses as introduced above. There is currently little recent evidence in favour of either hypothesis or indeed on the relationship between international activity and CSD in general. In recent studies the firm's country of origin (Newson and Deegan, 2002) and associated cultural differences contribute to differences in

[1] This aspect of the asymmetric response hypothesis is similar to the 'Maginot' hypothesis (Glasbeek, 1988; Wolfson and Beck, 2005), where, like the French fortifications of 1940, CSDs create a false sense of security.

practice (Adams, 2002).[2] Even so, of the large recent empirical literature on the determinants of CSD (for recent reviews, see Newson and Deegan, 2002; Brown and Fraser, 2006), the overwhelming majority is country specific (for example Deegan and Gordon, 1996; Deegan et al 2002; O'Dwyer, 2002; Cho et al 2006). Gray et al's (2001, p.332) suggestion that 'it is increasingly clear that social and environmental disclosure varies according to country.… Whether, however, any putative relationship between disclosure and corporate characteristics could be expected to exhibit itself consistently across different countries has not been examined systematically', therefore remains an important motivation for further research.

Country specific studies have adopted two distinct approaches. First, there have been *economic* studies which have explained CSD in terms of national stock market reaction and associated accounting metrics (Aerts et al 2008). Second, CSD has been related to the *social context* in which firms operate. In these approaches, either the economic relationship between the firm's management and shareholders is extended to include social and environmental interests as part of a wider definition of the firm's stakeholders, or CSD is seen as a process of legitimating the firm's activities in the eyes of society. To explain the differences between the approaches used in the current paper and the previous economic and social context studies, each aspect of the prior literature is now discussed in turn.

Economic studies have suggested that the stock market acts as an important source of demand for CSD information. Content analyses of website disclosures (Jose and Lee, 2007) and surveys of stock market participants have tended to conclude that CSDs are of moderate relative importance (Belkaoui, 1984; Benjamin and Stanga, 1977; Chenall and Juchau, 1977; Firth, 1979; Epstein and Freedman, 1994) while other ranking studies undertake surveys of potential users to indicate their needs and demands for social information (e.g., Buzby and Falk, 1979; Belkaoui, 1980; Dierkes and Antal, 1985). These studies find CSD to be of importance to users, and, in some cases, at least equally important as financial items of disclosure. More recently, Deegan and Rankin (1997) asked respondents to consider whether different decisions would be made depending on the availability of CSD, finding that environmental disclosures are important and material to investors. From an agency theory perspective, as shareholders become aware of the effect of social and environmental performance of the firms in which they invest, managers will emphasise social and environmental performance by disclosing social and environmental information in the annual reports (Ness and Mirza, 1991). Other studies (Milne and Chan, 1999, Murray et al, 2006) however, suggest investors largely ignore narrative social disclosure, whilst Toms (2002) and Hasseldine et al (2005) find that specific, auditable, and quantitative disclosures are more useful in building corporate social reputation.

To compound the problems of interpreting their mixed empirical results, these studies are often either mis-specified, under-theorised, fail to discriminate between hypotheses (Gray et al., 1995a; Tilt and Symes, 1999; Milne, 2002; Al-Tuwaijri et al 2004) or, lacking an international dimension, too limited in scope. In general, they are unable to accommodate structural conflicts of interest and inequalities (Tinker et al., 1991). Specifically for the purposes of the current study, if the demand for CSD is expressed only as a function of stock market calculation, although stock market participants may reflect social and political

[2] Where the literature on voluntary disclosure includes international comparison, studies have focused on areas besides CSD, for example intellectual capital (Brennan, 2001, and Bozzolan et al., 2003). For an exceptional example, see Guthrie and Parker (1990)

pressures in their valuations, the influence of these wider pressures cannot be quantified or differentiated from the underlying financial value of the disclosure. As the scope of international activity expands, it is expected that the firm faces greater pressure to disclose from a wider range of international financial institutions whose expectations may be complementary. At the same time, the political and social pressure for disclosure will potentially increase and these must be differentiated for the purposes of empirical testing.

Legitimacy theory offers a potential solution to the under-theorisation of the economics-based studies. It is founded on the notion of a social contract (Dierkes and Antal, 1985; Gray et al., 1995b) and the dimensions of such a contract potentially increase as the firm diversifies its activities internationally. Accordingly, CSD is sometimes seen as a response to threats to the organisation's legitimacy (Deegan et al 2000; Deegan, 2002). CSD may also be seen as a tool for establishing, protecting or repairing the legitimacy of the organisation in that they may influence public opinion and public policy (Patten, 1991; Cho and Patten 2007) and reduce political, social and economic exposure and pressure (Deegan and Rankin, 1997). Additionally, legitimation through CSD may play a part in influencing the policy process by shaping social and environmental standards, as suggested by Patten (1992: 472).

From the description of these studies, it can be seen that legitimacy theory is potentially nested within the benign hypothesis, as managers seek to fulfil their side of the social contract. The same might be said of ethical perspective stakeholder theory, in which all stakeholders (both primary and secondary) have a right to be provided with information about how the organization is impacting on them, through pollution, community engagement and so on (Deegan, 2000). For Lindblom (1994) the purpose is to influence 'relevant publics'. If a multi-national corporation begins to exploit the natural environment of an underdeveloped country, it follows that the members of that society become a 'relevant public'. However, it seems equally likely that the firm will not seek to manage its relationship with this 'public' if it has underdeveloped political organisation, regulation and lobbying institutions. Some studies have noted the selective nature of corporate legitimation and find that in situations of conflicting interests, organisations attempt to communicate legitimating characteristics to the most important relevant public and to ignore less important publics (Neu et al., 1998; Oliver, 1991). Acceptance of differential importance provides potential support for the asymmetric response hypothesis, and how 'most important' is defined and measured is very important for empirical testing.

Some of the answer is provided by stakeholder theory. According to this perspective, a stakeholder's power to influence corporate management is viewed as a function of the stakeholder's degree of control over resources required by the organization (Ullmann, 1985). There is some empirical support for stakeholder theory (Roberts, 1992, Neu et al 1998; Magness 2006), but these results need extending. In the existing literature, stakeholders groups are seen as spatially undifferentiated, for example 'shareholders', 'employees', 'publics'. A multi-national company is very likely to deal with more than one national group of shareholders for example. Moreover, in the international context especially, there is no necessary correlation between resource control and CSD because societies in possession of crucial resources, such as oil, are missing other necessary conditions for CSD to occur, for example developed stock markets and structures of political accountability. Meanwhile the absence of such structures may increase the perception of political risk in countries where investment finance is sourced, thereby creating an asymmetric demand for CSD in other

locations. In summary therefore the asymmetric response hypothesis offers a refinement of stakeholder theory and the possibility of extending it for the purposes of empirical testing.

Although the stakeholder and legitimacy approaches have achieved significant results, due to the theoretical overlaps discussed above it is not clear how the approaches compare and which of explanation is the more robust. In order to assess this, and the relative importance of stakeholder groups, the approach adopted in this study is to quantify the economic, social and political variables. Whilst this allows us to see the relative performance of these variables in testable models, a limitation is that it does not provide any generalisable test of stakeholder theory or legitimacy theory, nor offer comparable results to prior studies which have used qualitative approaches, although such results may be complementary to their principle findings. The study below is nonetheless important, since it is the first to simultaneously quantify economic, political and social variables in this fashion. In selecting the oil industry as its principal focus, it provides a useful case study of an environmentally sensitive industry operating in highly differentiated international social and political contexts.

HYPOTHESES, DATA AND VARIABLES

Hypotheses

According to the benign hypothesis, managers feel a sense of social responsibility which applies equally to the citizens of the countries in which they conduct their activities. As a company expands its scope of operations, the benign hypothesis predicts that the scope of the annual report also expands to accommodate the new arrangements of social accountability. If the benign hypothesis is true, CSD will be positively related to the number of countries of operation.

According to the alternative asymmetric response hypothesis, managers apply CSD where they are forced to do so by financial, political and social pressures. They will make differential disclosures reflecting inequalities in lobbying power between countries and between types of institution. For example where political institutions are underdeveloped, managers are less likely to adopt CSD in response to pressures in that country. To test the asymmetric response hypothesis three proxies are developed to measure financial, political and social accountability, derived respectively from stock market data, indices of political risk and social development.

Data

The sample comprises 87, 22 and 16 companies from the global Oil and Gas, Chemicals and Transportation industries, respectively. Consistent with Alciatore et al (2004) oil is the primary focus of the study and the chemical and transportation sub-samples were chosen as reference group comparators of firms also engaged in environmentally sensitive activities, but without the evident political pressures associated with oil extraction (Jenkins and Yakovleva, 2006). The dataset is based on year 2000 and the sample of oil and gas production companies was obtained from a population of 1841 oil and gas production companies (as listed on the

Wood Mackenzie database). Of these firms, the substantial majority did not have stock market quotations and were therefore excluded from the study. Eliminating other firms with missing data left a sample of 87. Therefore, most abandoned companies happened to be not listed in the stock market or they are only listed once in the best situations. Generally speaking, excluded companies were smaller and less multi-national in scope, which also reduces their potential relevance to the study. The information available for the remaining companies allowed the quantification of the number of countries where a company has oil and gas reserves and the commercial value of these reserves. The sample of 87 oil companies represents 5.54% of the population, and covers US$607,982m commercial reserves, or 72.85% of the population's commercial reserves.

Model Tested

The model tested in the paper can be summarised as follows:

$$CSD = \beta 0 + \beta 1NOC + \beta 2SMQ + \beta 3CONRISK_i + \beta 4ESI + \beta 5FRISK\ \beta 6SIZE + \beta 7\ IND + \varepsilon$$

where,

CSD = Corporate Social Disclosure;
β0 = intercept;
β1 to β7 = coefficients of slope parameters;
NOC = the number of countries of operation for each company;
SMQ = the number of foreign stock market quotations;
$CONRISK_i$ = the unweighted average political risk of the countries in which firm i operates expressed as a percentage where 0% = minimum degree of risk and 100% = maximum risk;
ESI = the unweighted average environmental sensitivity index (ESI) of the countries in which firm i operates expressed as a percentage where 0% = minimum degree of sensitivity and 100% = maximum sensitivity;
FRISK= the total financial risk measured by the standard deviation of stock returns for the year 2000;
SIZE = a control variable that proxies for corporate size and is measured by the natural logarithm of sales turnover;
IND = the industry classification dummy variable, CHEM = chemical industry firm, OIL = oil industry firm; TRANS = transport industry is used as a reference group; and
ε = error term.

Dependent Variable

CSD as an empirical variable is defined as all the information produced by corporate management in the annual report regarding the interaction between the organisation and its physical and social environment, including issues such as those relating to human resources, community involvement and the natural environment. This study adopts the annual reports as

the source of CSD data. The annual report is a statutory, accessible corporate document which speaks about the organisation as a whole, is widely used in prior research (Deegan and Rankin, 1997 Gray et al., 2001; Wiseman 1982: 55) and is viewed as credible by user groups (Tilt, 1994).

Content analysis is used to measure CSD as it has been widely adopted in previous social responsibility disclosure studies (Hackston and Milne, 1996). To facilitate the completion of the content analysis, an interrogation instrument, checklist, and decision rules were developed. The sentence was used as the unit of coding. Reliability was assessed using two rounds of pre-testing by three coders. The two pre-testing rounds produced increasingly convergent views as to what constituted a CSD sentence, and led to the formulation of several decision rules and amendments to the initial checklist.

Two measures of CSD were used. CSD is the total number of sentences and CSDP is the average number of sentences per page, using an approximation to page measurement from the sentence-coded data (after Hackston and Milne, 1996). The central assumption underlying the choice of dependent variable is that expanded disclosures in the Annual Report are complements rather than substitutes, and CSD is the measure that captures this. Therefore, in the regression analysis CSDP is primarily a robustness check on the main model.

Independent Variables

Number of countries (NOC) is used as a measure of the degree of multi-nationality (extent of multi-national operations) and the MNC's power and is the principal variable used to test the benign hypothesis, where, if true, a positive relationship with CSD is expected. Belkaoui (2001) measures the level of multi-nationality by the ratio of foreign profits / total profits and the number of countries in which the company operates. Meek et al. (1995) measure multi-nationality as a ratio of sales from outside the MNC's home country to total sales. For this study, because expansion into a new country creates a new social responsibility relation and therefore a potentially new accountability relation, number of countries of operation is used and was directly obtained for each company from its annual report.

The number of stock market quotations (SMQ) is used to examine whether financial market pressure contributes a proportionate increase in CSD. This variable is used to test whether or not such listings create financial pressures for more disclosure over and above the mere scope of international operations suggested by the benign hypothesis. A positive relationship between CSD and SMQ would provide support for the asymmetric response hypothesis. The number of stock listings for the sampled companies was obtained from *Datastream*. Listings on more than one stock exchange in any given country are counted as one listing for purpose of this study. This is because, the stock exchanges in one country usually share the same working environment and thus add nothing to the study that aims to investigate the effects of foreign multiple listing. Additionally, only those stock listings occurring before April 2001 are included in the study. Hackston and Milne (1996) provide some evidence that dual and multiple overseas listings may be associated with greater social disclosure. Cooke (1989, 1992) finds an international listing effect on general voluntary accounting disclosures for Swedish and Japanese companies, respectively and Gray et al. (1993) find the same for their sample of U.S., U.K. and Continental European MNCs.

Country risk (CONRISK) is a proxy for political stability. The study uses the International Country Risk Guide (ICRG) risk rating system to assign a numerical value (risk points) to a predetermined range of risk components, according to a preset weighted scale, for each country covered by the system. Each scale is designed to award the highest value to the lowest risk and the lowest value to the highest risk. The country risk variable refers to different risk aspects of countries where MNCs operate. The country risk measure is used twice in the study as a measure of both the countries' of origin and the countries' of operation political systems (coded [CONRISK(O)] and [CONRISK], respectively). For each sample company the average political risk for all the countries in which the firm operates was computed. In line with the assumption under the benign hypothesis that social responsibility to new publics creates complementary lines of accountability, simple averages were used so that each country carries an equal weighting. The total was then subtracted from 100%, so that firms with operations typically in higher risk countries have higher CONRISK scores.

The Environmental Sustainability Index (ESI) is used to proxy for social development. A high score indicates a high level of development and associated social and environmental regulation. The ESI has been used to proxy for country environmental risk in other contexts (Sandrea, 2003), but not to date in accounting research. The measure includes different areas such as the environmental system (urban air quality, water quantity and quality, land, bio-diversity) in the country, environmental stresses on the system such as air pollution, water pollution/use, ecosystem stress, waste/consumption, and population, human vulnerability and public health, the social and institutional capacity (their science/technical capacity, rigorous policy debate, environmental regulation and management, tracking environmental conditions, and the public choice failures), and the overall country's global stewardship (its ability to participate in efforts to conserve international environmental resources, and its impact on global commons). For each sample company the average ESI for all the countries in which the firm operates was computed. In similar fashion to the CONRISK variable above, ESI is used twice in the study as a measure of both the countries' of origin and the countries' of operation environmental sensitivity (coded [ESI(O)] and [ESI], respectively). Again, the assumption is that under the benign hypothesis social responsibility to new publics creates complementary lines of accountability, so again simple averages were used so that each country carries an equal weighting. The total was then subtracted from 100%, so that firms with operations typically in socially underdeveloped countries have higher ESI scores.

Financial risk (FRISK) is included in the study as a risk variable in parallel with CONRISK and ESI. It is assumed that if corporate managers engage in CSD in response to widening their scope of operations or exposure to political and social risk then financial risk will also form part of their risk management strategy. Financial risk is computed as the standard deviation of monthly stock returns which was calculated from the share prices for the year 2000 and obtained from the *Datastream* database for each of the sample companies.

Control Variables

A number of studies have examined whether industry sector is able to explain CSD, so controlling for industry membership in the regressions is potentially important. Hackston and Milne (1996) report that disclosures are higher in, what they classify as, high profile industries while Ness and Mirza (1991) found this relationship holds specifically for the oil

industry. On the other hand, Cowen et al. (1987), Adams et al. (1995) and Freedman and Jaggi (1986) find that specific areas of disclosure are related to industry sector. Cowen et al. (1987) find that the industry helps to explain energy and community disclosures whilst Adams et al. (1995) conclude that industry sector explains some environmental and some employee disclosures. The sample contains companies from three industries, shown under the IND grouping variable. They are Chemicals (CHEM), Oil (OIL) and Transport (TRAN). Each is chosen for the relative environmental sensitivity of its activities. TRAN is used as a reference group so that the differential effects of CHEM and OIL can be assessed in the analysis.

An association between company size and CSD has been demonstrated in a number of empirical studies (Belkaoui and Karpik, 1989; Cowen et al., 1987; Kelly, 1981; Patten, 1991, 1992; Trotman and Bradley, 1981). Although size appears to be the most consistently reported as having a significant association with CSD, not all CSD studies have supported a size-disclosure relationship, where, for example, Roberts (1992) found no relationship in a US sample. Similarly, in New Zealand, Ng (1985) failed to support hypothesised association between company size and CSD practices. These inconsistencies might reflect differences in the countries of study or even the nature of sampled companies (local, multi-national, or a mix of the two types). Corporate size is measured in different ways in the prior CSD literature such as by the natural logarithm of book value of total assets (Singhvi and Desai, 1971; Patton and Zelenka, 1997; Inchausti, 1997), by the market value of equity (Lang and Lundholm, 1993), the natural logarithm of turnover (Belkaoui and Karpik, 1989; Patten, 1991; Roberts, 1992). In this study SIZE is the natural logarithm of the turnover, being the most popular measure of corporate size in the past research of CSD.

ANALYSIS

Descriptive Statistics

Summary descriptive statistics are reported in Table 1. Preliminary exploration of the data revealed a number of problems. As the dependent variable CSD is a count measure, the most important issue was model specification. As is typical of such data the standard deviation is high relative to the mean. However all companies in the sample made some disclosure and there was no limit on the right hand side of the distribution. Therefore the dependent variable CSD was transformed into a categorical variable CSD1 taking a value of 1 if CSD>0 and CSD<=20; 2 if CSD>20 and CSD<=39; … 5 if CSD >80. The effect of this transformation was to reduce the standard deviation in relation to the mean (Table 1, Panel A). For the same reasons a similar transformation was applied to CSDP, using cut points at CSDP>0, 1, 2, 3, and >4 to create a new categorical variable CSDP1. As can be seen from Table 1, the effect of these transformations was to reduce the standard deviation relative to the mean. To accommodate the categorical dependent variable, ordered probit specification was used.

Table 1. Descriptive Statistics and Correlation Matrix

A: Variable descriptives

Variable	Mean	Std. Dev.	Min	Max	Swilk
CSD	64.544	61.356	1	258	0.000
CSDP	3.093	2.976	0.040	12.320	0.000
CSD1	2.838	1.732	1	5	0.033
CSDP1	2.862	1.579	1	5	0.272
ESI	50.568	9.937	25.570	77.260	0.808
ESI_O	35.295	9.370	19.530	62.440	0.000
CONRISK	28.119	6.022	17.1	45.58	0.083
CONRISK_O	19.261	6.965	9.500	52.500	0.000
CHEM	0.185	0.390	0	1	
OIL	0.685	0.466	0	1	
SIZE	6.433	1.051	3.580	8.380	0.000
FRISK	0.120	0.050	0.020	0.300	0.000
NOC	17.855	22.541	2	150	0.000
SMQ	2.298	1.385	1	9	0.000

B: Correlations	CSD1	CONRISK	CONRIS~O	ESI	ESI_O	CHM	OIL	SIZE	FRISK	NOC	SMQ
CSD1	1.000	0.215	-0.103	0.105	-0.068			0.466			
CONRISK		1.000	0.254	0.618	0.147			0.125			
CONRISK_O			1.000	0.324	0.627			-0.024			
ESI			0.345	1.000	0.474			0.258			
ESI_O			0.528	0.493	1.000			0.200			
CHEM	0.294	-0.064	-0.112	0.185	0.179	1.000					
OIL	-0.193	0.192	0.190	-0.078	-0.224	-0.705	1.000				
SIZE						0.153	-0.210	1.000			
FRISK	-0.461	-0.115	0.114	-0.047	0.021	-0.081	0.117	-0.371	1.000		
NOC	0.385	0.420	0.123	0.435	0.246	0.225	-0.228	0.578	-0.364	1.000	
SMQ	0.361	0.158	-0.018	0.144	0.009	0.264	-0.185	0.231	-0.259	0.280	1.000

A second problem was the influence of outlying observations in the regression residuals in tests of the full model. Royal Dutch Shell had a particularly disproportionate influence and was removed from subsequent regressions in which the sample size is reported as 124. Cook-Weisberg tests indicated the presence of heteroscedasticity in the residuals, so robust standard errors were used in all models tested (White, 1980). Finally, as can be seen from Table 1 Panel B there was significant cross correlation between several of the independent variables. The CONRISK and ESI variables both measure the general level of development to some extent and therefore some correlation is to be expected. Multicollinearity was dealt with by sequential variable omission and by using stepwise model building.

DISCUSSION OF RESULTS

Panel A of Table 2 reports the results of six models using CSD1 as the dependent variable. NOC was insignificant in all models tested, including model 1a which offers a specific test of the benign hypothesis. Although NOC always has a positive coefficient, there is no evidence that as the firm diversifies its operations, managers feel any obligation to open up new lines of reporting and accountability to the public in the affected countries.

Model 2a adds the SMQ variable which is highly significant in this and all subsequent models tested. Looking at the results in models 1a-6 inclusive it can be seen that the SMQ variable dominates the NOC variable. International diversification of financial accountability therefore dominates the diversification of operating activity as a determinant of CSD. In addition, the marginal effects are much greater. On average, the firms were operating in 18 different countries but had only two stock market quotations. Marginal effects analysis shows that an additional stock market quotation increases CSD by around 25%.

The introduction of CONRISK and ESI variables into the analytical models illustrated their differential effects.[1] CONRISK had a higher coefficient in all models in which it was tested compared to CONRISK(O). In contrast, ESI(O) had a higher coefficient and was more significant than ESI in all models. In all models CONRISK (including CONRISK(O)) and ESI (including ESI(O)) variables have positive and negative signs respectively. As expected, exposure to political risk increases CSD whilst relative social underdevelopment reduces it. Model 3a summarises the main results from tests using permutations of these variables.

Models 4 and 5 show the differential impacts of ESI and ESI(O), confirming the latter variable to be more influential. These results suggest that political risk in the destination country and social development in the home country condition the level of CSD. Because CSD is explained more strongly by the level of social development in the multi-nationals' own country, rather than in the country of operation, the benign hypothesis is rejected. Managers do not provide equal accountability to the people of the different countries in which they operate. Managers seem to be giving precedence to publics that can exert more influence on them and but they feel nonetheless obliged to respond to the increased political risk overseas through increased CSD. These results provide support for the asymmetric response hypothesis.

[1] On average a sample company's engagement in international activities increased its exposure to political risk by 46% and to environmental sensitivity risk by 43% (based on the ratios of CONRISK/CONRISK(O) and ESI/ESI(O) respectively in table 1.

Table 2. Regressions on Corporate Social Disclosure

A: Dependent variable = CSD1

	Model					
	(1a)	*(2a)*	*(3a)*	*(4)*	*(5)*	*(6)*
NOC	0.005	0.003	0.002	0.004	0.004	
SMQ		0.282***	0.256***	0.262***	0.279***	0.251***
CONRISK			0.033**			0.061***
CONRISK (O)						0.032**
ESI					-0.016*	-0.033**
ESI(O)			-0.027**	-0.023**		-0.029**
FRISK	-7.620***	-6.955***	-6.679***	-6.643***	-6.992***	-7.846***
CHEM	0.934**	0.742**	0.770**	0.812**	0.871**	0.943**
OIL	0.368	0.278	0.117	0.276	0.364	
SIZE	0.516***	0.486***	0.521***	0.523***	0.520***	0.597***
Psuedo R^2	0.154	0.179	0.199	0.190	0.185	0.216
Chi Sq	58.290	83.620	75.420	76.880	81.430	97.350
N	124	124	124	124	124	124

B: Dependent variable = CSDP1

	Model					
	(1b)	*(2b)*	*(3b)*	*(7)*	*(8)*	*(9)*
NOC	0.006	0.004	0.004	0.004	0.005	
SMQ		0.279***	0.268***	0.254***	0.278***	0.262***
CONRISK			0.005			
CONRISK_O				0.046***	0.026**	0.049***
ESI					-0.018*	
ESI_O			-0.010	-0.033**		-0.035**
FRISK	-5.543***	-4.681**	-4.428**	-5.531**	-5.653**	-5.941***
CHEM	0.969***	0.745**	0.759**	0.884**	0.929**	0.637***
OIL	0.493	0.415	0.387	0.302	0.464*	
SIZE	0.501***	0.476***	0.491***	0.537***	0.524***	0.548***
Psuedo R^2	0.133	0.158	0.161	0.174	0.168	0.171
Chi Sq	56.010	81.320	79.830	85.910	83.690	79.770
N	124	124	124	124	124	124

Significance levels.
*** $p < .01$.
** $p < .05$.
* $p < .10$.
Based on White's (1980) heteroscedastic consistent standard errors.

Model 6 reports a stepwise forward selection model using a 0.2 significance level for variable addition. The model confirms the positive relationship between CSD and the two CONRISK variables and the negative relationship with the two ESI variables. In view of the high correlation between CONRISK and ESI and CONRISK(O) and ESI(O) respectively (Table 1), the t-statistics for individual variables must be treated cautiously.

FRISK had a consistently high and negatively significant coefficient. The volatility of the firm's stock therefore seems to act as a strong constraint on CSD. There may be two reasons for this. First, where firms have a high level of combined operating and financial risk, they may be reluctant to disclose details of other aspects of their activities in case the market's perception of their riskiness increases further. Second, the volatility of their stock price may reflect their relatively narrow range of international activities which in itself reduces the necessity for disclosure. The interpretation of this variable is not central to the main objectives of the current paper, but in view of these findings is nonetheless a subject of potential further research.

Dealing with the control variables in turn, the industry control variables showed that whereas oil and transport firms were indistinguishable from one another, firms in the chemical industry make significantly more CSD. Finally, the SIZE variable was positive and significant in all models tested showing strong support for the common finding of a strong relationship between size of firm and CSD.

Panel B of Table 2 shows the results of similar models using CSDP as the dependent variable. Models 1b, 2b and 3b correspond exactly to the same numbered models in Panel A. Also, as in Panel A, model 9 reports the results of a stepwise forward selection model using a 0.2 significance level for variable addition. The results for models 1 and 2 respectively were very similar. Using the alternative dependent variable the result for NOC remains the same. In model 3b neither CONRISK nor ESI(O) were significant, in contrast to model 3a. In other words, these factors promote an increase in absolute quantity of disclosure (model 3a) but not an increase in the prominence of CSD as a reported issue relative to other disclosures (model 3b). A possible reason is that because disclosures are being made primarily for the consumption of stock market participants and the domestic audience, managers consider the quantity of information to be sufficient, and do not privilege CSD at the expense of other disclosures. As models 7 and 8 in Panel B suggest, they are more likely to do this where CONRISK(O) is high. Again in these models ESI(O) has a larger coefficient and is more significant than ESI, suggesting support for the asymmetric response hypothesis consistent with the Panel A results. Results for control variables are qualitatively similar to Panel A.

CONCLUSION

This paper extends prior literature on CSD determinants in two ways. First, it uses a sample of multinational firms in environmentally sensitive industries to examine their accounting disclosure responses to the pressures implied by the nature and scope of their operations. Second, the paper includes two hitherto unexamined variables measuring political risk and social development in order that these pressures can be measured and their effects directly tested.

The benign hypothesis, which assumes corporate control by enlightened oligarchs of managers, who apply similar standards of social accountability to different groups of people across the globe, is rejected. The alternative asymmetric response hypothesis is favoured by the evidence presented above. According to this hypothesis, the domestic public is comforted by the presence of impressively detailed CSDs in annual reports but is in ignorance of the true threat presented by corporate activities internationally. Meanwhile in countries where environmental protection is weak, local populations are all too well aware of the impacts of corporate activity but lack the defence mechanisms offered by CSD in more developed countries. As the survey results show, whatever the conscience of an individual manager, collectively managers are motivated by the need to satisfy the requirements of stock market participants first, their domestic public second and the people affected by their international activities last. To the investor in the developed world, this 'Maginot' of CSD offers scant protection from the changes in material conditions that necessarily follow from the exploitation of the world's resources by oil companies and others, and like the French generals of 1940 they will find that whilst paying attention to their neat line of forts, everything else was being lost.

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OIL AND DEPENDENCY: THE CASE OF KAZAKHSTAN

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ABSTRACT

Following the collapse of the Soviet Union in 1991, the newly independent oil-rich country of Kazakhstan has become a major recipient of foreign direct investment (FDI). Although international organisations such as the IMF and UNCTAD have claimed that FDI can be considered as an engine in the transition from state socialism and as a powerful force for integration of this region into the global economy, this investment also poses significant risks to Kazakhstan. These risk fall into two broad categories. The first category can be broadly described as issues associated with the "resource curse" or the "Dutch disease". The term Dutch disease describes a situation where booming demand in oil exporting countries due to high oil revenues leads to shift of an economy's productive resources from the tradeable sector to the non-tradeable sector. The second category is associated with the over-dependency of oil exporting countries on a relatively small number of large multinational corporations (MNCs). This over-dependency can lead to a situation where licenses and concessions are granted at less favourable conditions than if they were auctioned in an efficient market. Examining the licensing policy of the Kazakhstani Energy and Mineral Resource Ministry, this paper notes that the latter issue of over-dependency has become less of a risk due to deliberate efforts to diversify investment relationships. Notwithstanding this situation there is some evidence that it remains diiIfcult for oil exporting nations such as Kazakhstan to ensure that oil revenues are channeled into sustainable economic development.

COUNTRY BACKGROUND

Kazakhstan possesses one of the largest shares of proven oil and gas reserves in the Commonwealth of Independent States (CIS) countries, which makes it an important player in the world energy market. Independent since 16 December 1991, Kazakhstan has a brief

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history of 17 years. This follows 70 years of being part of the Soviet Union, during which the region has endured massive transformations from nomadic life styles to collectivization. After recovering from World War II, the 'virgin lands' campaigns in 1950s, and political conflicts with Moscow (including a tragic demonstration in Almaty in December 1986, when a great number of Kazakh people died while protesting against Moscow's government), Kazakhstan was been through massive cultural and educational changes. Since independence Kazakhstan has become one of the largest net recipients of Foreign Direct Investment (FDI), surpassing by far the cumulative FDI receipts of other CIS countries. The reason for this disproportional accumulation of foreign investment is Kazakhstan's ownership of one of the largest shares of currently identified resources of gas and oil in the region.

By contrast to some countries in this regions, Kazakhstan has experienced a relatively high level of political stability. In 1989 Nursultan Nazarbayev became the first secretary of the Kazakh Soviet Socialist Republic. As a result of the Belavezha Accords (8th December, 1991), which declared the Soviet Union effectively dissolved, Nursultan Nazarbayev became the first president of Kazakhstan. Nazarbayev led the country onto the world stage as an independent state (Terterov, 2004) and was elected again as a president for a period of seven years in the 2005 presidential elections. The executive branch of the Kazakh government is headed by Prime Minister Karim Massimov (incumbent since 10 of January 2007) who is responsible for reporting daily activities of the Government [1]. The Parliament consists of two chambers: the Majilis (lower house of Parliament) and the Senate (upper house), whose members are elected for five-year and six-year terms respectively [2]. Although the parliament is the supreme legislative body, its powers are relatively weak in comparison to those of the executive. In 2007 the Parliament underwent fundamental changes by adding members to both the Senate and Majilis, with the latter body elected exclusively through a system of proportional representation (Bowyer, 2008). The Constitutional Council of the Republic of Kazakhstan which consists of seven members has a special position in the political system of Kazakhstan. The ex-Presidents are the life time members of the Constitutional Council.

The role of political parties in Kazakhstan is governed by the 2002 Law "On political parties". Today eleven political parties are officially registered, including the dominant ruling Nur-Otan party [3]. This party, which dominates parliament and most public debates, was established in February 1999 under the original name of Otan [4]. In the second half of 2006 the four pro-presidential parties, including ASAR, Civil Party, Otan, and Agrarian Party) were merged into Nur-Otan (Light of the Fatherland). Nur Utan exists principally as a vehicle to support and promote the president, similar to its Russian counterpart the United Russia party (Denison and James, 2008).

However, there are several other political parties in Kazakhstan's political scene. Apart from Nur-Otan, the present-day political parties in Kazakhstan can be grouped into three categories. These include Pro-presidential parties such as Rukhaniyat (which addresses social issue and seeks to develop spirituality of society); "soft" opposition parties such as Adilet (which fights against corruption) and Ak-Jol (which advocates an independent, democratic and free Kazakhstan; opposition parties such as the Kazakh Social Democratic Party Auyl (which focuses on the development of agriculture and the protection of the interests of agricultural workers) and the Communist Party of Kazakhstan (which is the successor to the Communist Party of the Kazakhstan SSR); and "hard" opposition parties such as Azat (opposition to the ruling elite), the National Social Democratic Party (which emphasizes the

establishment of democracy, rule of law, and a socially-oriented state) and the Alga People's Party (which maintains two newspapers, conducts its own public opinion surveys, and monitors the work of parliamentary deputies). The political opposition in Kazakhstan has weakened following the August 2007 elections to the Majilis (Bowyer, 2008). This is primarily due to the fact that according to the Law "On Political Parties" parties must poll at least 7% of the vote to obtain seats in parliament. As a results of the 2007 election "Nur-Otan" won by a wide margin (88,41%) and none of other political parties reached the 7% requirement.

The level of Kazakhstan's human development as measured by the United Nations Development Program (based on a combination of life expectancy, basic level conditions, education level, and GDP) is similar in position to that of Mexico and Poland (Olcott, 2002). Because of its large territory Kazakhstan is one of the least densely populated countries in the world, with a population density of 5.7 persons per square kilometer. Approximately 15 million inhabitants live in Kazakhstan which includes 53.4% Kazakhs, 30% Russians 30%, 3.7% Ukrainians, 2.5% Uzbeks, 2.4% Germans, 1.7% Tatars, 1.4% Uygurs and 4.9% others [5]. Currently Kazakhstan continues to experience migration from poor rural areas into to urban areas, which has led to a situation where almost 56% of the population now live in urban areas. This has been coupled by a decline of the birth rate to around 1.8 – 1.9 children per couple, which, although higher than that of Russia will not sustain the current population level. This situation is aggravated by the fact that a significant share of the of the ethnic non-Kazakh population left to their countries of ethnic origin, including 63.2% of Germans, 28.6% of Russians, 38.9% of Ukrainians, 24.1% of Tatars, 38.7% of Belarusian's, 3.5% of Koreans, 13.1% of Azeri 13,1 %, and 21.1% of Poles [6]. In order to combat this decline in population, the Kazakhstani government is actively encouraging the return of ethnic Kazakhs living abroad, officially called 'oralmans', to the country. In 2004 and estimated 44,300 Kazakhs registered as returnees, and it is assumed that the inflow of this skilled immigrants helped boost the country's economy (Bilalov, 2005).

ECONOMIC DEVELOPMENT

Kazakhstan is rich in mineral resources including oil and gas, gold, copper, magnesium, and uranium. Like most newly independent CIS countries Kazakhstan's development agenda has focused on accelerating economic growth and creating an infrastructure capable of sustaining that growth.

During the Soviet period Kazakhstan was considered an agrarian state and a supplier of raw materials. Additionally, military production played a major role in the economy. Following its independence, Kazakhstan therefore faced numerous economic, social and environmental challenges. The first few years of Kazakhstan's independence were characterized by economic decline, mostly due to the destabilizing influence of the collapse of the Soviet Union. Nonetheless, in 1993 the National Bank of Kazakhstan introduced its own currency, the tenge. This currency was subsequently devalued by almost 85 % in the course of a year (KPMG Audit LLC, 2008).

Since 1992 Kazakhstan has actively pursued a program of economic reform. During the period from 1995 to 1997 this government program of economic reform and privatization was accelerated, resulting in a substantial shift of assets from the government sector into the private sector. In 1998 Kazakhstan's economy experienced a 2.5% decline in GDP due to slumping oil prices which were partially due to reduced demand for Kazakhstan's oil in Asia. A devaluation of the national currency in early 1999 and a bumper harvest in fall, however, revived the economy. In 2000 soaring oil prices led to a massive growth in the Kazakh GDP of almost 10%. When the oil prices stabilized in 2001, Kazakhstan achieved a GDP growth of 13.2%, its best economic performance since 1991. Thereafter cumulative foreign investments, high oil prices and conservative fiscal policies allowed Kazakhstan to maintain economic stability together with relatively high growth levels. This growth has stimulated the construction industry leading to the rapid expansion of the former capital Almaty as well as the construction of the new capital Astana.

Overall Kazakhstan's GDP has grown by 8% or more per year between 2000 and 2006 and now is approximately US$ 5,241 per capita. The country's international reserves have risen to about US$ 20 billion. Driven by high inflows of foreign currency into the country, the national currency, the tenge, has appreciated 20% against the US Dollar since 2002, despite persistent National Bank interventions to slow down this increase [7]. A sudden increase in real estate prices in 2007 together with the international liquidity crisis hit the country's financial and construction industries hard and left many construction companies and banks struggling with bankruptcy. In 2007 inflation also reached double digits for the first time. This caused international credit ratings agencies to lower Kazakhstan's sovereign credit ratings. Despite these turbulences, Kazakhstan's unemployment rate has continued to decrease, following a slight increase from 1996 to 1999 and a sudden drop in 2000 and 2001 [7]. Today imports are mostly dominated by investment goods (plant, machinery and production equipments) and intermediate industrial use goods. Food and non-food consumer items are imported in very small amounts, but this has been increasing year by year (Salimov, 2008). At this stage it is unclear how the current credit crunch will affect the future expansion of the Kazakhstani economy. Although Kazakhstan maintains strong trade ties with Russia which is already showing the effects of this crisis, there is a possibility that high oil price will leave Kazakhstan largely unaffected by ongoing problems.

KAZAKHSTAN AND THE "RESOURCE-CURSE"

Although there is evidence that Kazakhstan's economy has been suffering from turbulences in the world oil market, it is difficult to describe the country as a victim of the so-called "resource-curse". In particular, this is evidenced by the fact that Kazakhstan's growth has been continuous over a period of nearly ten years and. Perhaps more importantly is the fact that this growth has been accompanied by a growth in employment.

In its most basic form, the so-called "resource curse", refers to the empirical observation that the economies of resource-rich countries grow on average more slowly than those of resource-poor countries (see, e.g., Auty, 1990, 1993; Volchkova and Suslova, 2006). The idea that natural resource endowments could have an adverse effect on development among development economists such as Raul Prebisch, Hans Singer, and Alfred Hirschman in the

1950's and 1960's (Stevens, 2003). Underlying these analyses was the assumption that positive linkages from primary product exports would be limited compared to manufacturing, leaving these economies uniquely exposed to shocks as a result of the sharp increase or decreases in raw material prices (Neary, 1986). Further evidence of this problem was found in connection with research on the so-called "Dutch" disease (Corden and Neary, 1982; Rosenberg and Saavalainen, 1998). This research emerged in connection with the supposed observation that Dutch natural oil and gas discoveries in the 1960s lead to a slowdown in Dutch manufacturing. According to Corden and Neary (1982) the notion of a Dutch disease can be applied to any three sector economy which includes (1) a booming sector, such as oil or other primary product exporting industry, (2) a sector of other tradeable, which would include both manufacturing and agriculture, and (3) non-tradeable. In a simple static model, a boom in the primary sector affects the rest of the economy in two main ways; namely though a spending effect and long term resource movements. This is accompanied by an appreciation of the exchange rate whereby an increased inflow of foreign exchange will initially raise the nominal exchange rate value of the domestic currency. However, if there is a sharp increase in domestic demand accompanied by inflation, the increased demand for foreign exchange may be offset the initial nominal exchange rate appreciation, causing the nominal exchange rate not to appreciate or even to depreciate. If there is a real exchange rate appreciation this may be reflected in an increase in the prices of non-tradeables relative to those for tradeables (Kuralbayeva, 2001). This process in turn has the effect of increasing the domestic costs of producing tradeable goods and reducing country's international competitiveness. Corden (1984) has argued that this analysis is applicable to a number of similar phenomena such as gold discoveries in Australia, capital inflows to Switzerland, and the inflow of American gold to Spain in the sixteenth century, among other cases.

Egert and Leonard (2007) have examined the evidence for Dutch disease symptoms in Kazakhstan. This analysis led to the following findings:

(1) During the period from 1999 to 2005 the price of crude oil had risen continuously from below USD 10 a barrel to above USD 50 a barrel, with Kazakhstan benefiting from world oil price increases.
(2) During the same time period the share of investment in the Kazakh oil sector as a share of total investment has been declining. FDI flows to the oil sector recorded an upsurge from 1999 to 2001, but then the relative share of FDI in this sector declined. Meanwhile, the share of investment in the manufacturing sector remained relatively stable from 1996 to 2004, and FDI slightly picked up after 2000, which coincided with the drop in FDI in the oil sector.
(3) Regarding productivity, real and nominal wages and relative prices, there is no clear evidence of Dutch disease symptoms. The same applies to the potential appreciation of the real exchange rate.
(4) Perhaps most importantly there is no evidence of declining output, employment and exports in non-oil manufacturing.

Overall this analysis lends only very limited evidence to the presence of Dutch disease symptoms in the Kazakh economy. Thus, although the price of oil increased from 1998 to 2005, this did not lead to dis-proportionate growth in investment in the oil sector. Also there was little, if any, effect on the relative prices of non-tradeables and non-oil tradeables through

the wage channel. However there appears to be an increasing nominal appreciation of the exchange rate which could have further effects on macroeconomic parameters.

Thus, if oil prices remained high in the future, there is every possibility that nominal and real exchange rates will continue to appreciate. This would be very likely to put pressure on non-oil industries and adversely affects their position.

DEPENDENCY ON MULTINATIONALS

Organizations like the IMF and UNCTAD have maintained fairly consistently that FDI was a an engine in the transition from state socialism and a powerful force for the integration of these countries into the global economy (Bandelj, 2002). Similarly, the economist Schmidt has argued that "… without vast inflows of foreign capital, successful transition was unlikely" (Schmidt, 1995).

Empirical studies of FDI in transition economies have suggested that these investments are driven by a number of factors such as domestic and potential export market size, natural resources endowments, levels of bureaucracy, economic and political stability, labour skills and cost and level of progress in transition reforms (Bevan and Estrin, 2000; Kinoshita and Campos, 2003). This observations closely match the earlier work of Dunning (1993) who suggested that the investment behaviour of multinational enterprises was driven by three most common motivations; namely, market-seeking FDI, resource-seeking and effciency-seeking FDI.

It is fairly obvious that FDI in Kazakhstan is primarily resource- seeking and as such driven by the abundance of available oil and gas reserves. However, there are also a number of institutional factors which make Kazakhstan a preferable target for foreign investment as compared to other oil provinces. These include, apart from the country's political stability, its relatively favourable treatment of foreign investors. Thus, there is no evidence that, since independence. Kazakhstan has conducted any form of expropriation of foreign investors or that the country has restricted in any significant way the outflow of oil revenues. This position has been strengthened with Kazakhstan's law "On Investments" (January 2003) that superseded and consolidated past legislation governing foreign investment, establishes a single investment regime for domestic and foreign investors and provides guarantees of non-discrimination against foreign investors.

One major concern associated with resource-seeking FDI is the possibility of over-dependency on a relatively small number of multinationals (Moran, 1998). These concerns are aggravated where there is evidence of close collaboration among these multinationals which is potentially more likely to occur if these multinationals originate from the same country and maintain close links to home-country national elites. Regarding the potentially over-powering nature of such coalitions, Stallings (1990 has argued that

> In its extreme version, the issue at stake is whether the state's choice of development strategy determines the role of foreign capital or whether foreign capital determines development strategy. (p80)

Up until the late 1990s, there is evidence that Kazakhstan did indeed develop a strong dependency on a relatively small number of US oil companies, including Exxon Mobil,

Chevron, Texaco and ConocoPhilips. This was paralleled by other major US investments including an agreement signed by Philip Morris with Almaty Tobacco Company in 1993, stipulating a US$ 350 million investment over the first five years. Philip Morris started producing cigarettes for domestic consumption in 1994, and in early 2000 opened a US$ 200 million cigarette manufacturing plant, employing 3,000 on the outskirts of Almaty with production capacity of 25 billion cigarettes annually (Terterov, 2004).

More importantly there was a notable dominance of US companies in major Kazakh oil developments. Thus the largest of the three major oil extraction consortia in Kazakhstan, TengizChevrOil (TCO), is dominated by Chevron Texaco. Chevron Texaco is a 50% participant in the venture and leads TCO's development of the giant Tengiz Field. ExxonMobil has 25%, KazMunaiGas has 20%, and Russian-US LUKARCO holds the remaining 5%. Tengiz, one of the largest hydrocarbon discoveries in the world over the past 30 years, holds an estimated nine billion barrels of recoverable reserves. The Tengiz project is the largest Western-run oil producer anywhere in the former Soviet Union, currently producing 286,000 barrels a day. Most of the oil is exported to the Black Sea through a US$ 2.7-billion pipeline run by the Caspian Pipeline Consortium. In order to increase production capacity, TCO is installing Second Generation Production (SGP) and Sour Gas Injection (SGI) facilities. Industry sources suggest that TCO is to invest at least US$ 2-2.5 billion in the development of these projects in Kazakhstan's major Tengiz oil and gas deposit in the coming years. The company has already invested about US$ 1.4 billion in Kazakhstan to date. TCO plans to invest US$ 550-750 million in materials and equipment required to increase oil output. The investments will be carried out under a plan for financing the second stage of the Tengiz oil field adopted by the company's partners' council.[8]

As regard the licensing policy of the Kazakhstani Ministry of Energy and Mineral Resources, there is evidence that US and Canadian oil companies did indeed establish a dominant role during the early years of oil production. Thus, US and Canadian companies obtained a total of 38 out of total of 48 licenses awarded between 1994 and 1997, as well as playing a major role in virtually all key oil developments of this period [8]. This pattern, however, changed on account of the government's 1997 announcement of a "multi-vectoral" policy as part of the "Kazakhstan 2030" programme (Saurbek, 2008). Thus, as of the late 1990s there is evidence of the involvement of a wider variety of companies as well as of efforts to reduce dependency on a small number of existing transport routes.

This is evidenced, *inter alia*, by the creation of the Offshore Kazakhstan International Operating Company (OKIOC), an international oil and gas consortium comprising nine companies including BP-Amoco, Statoil, Agip, British Gas, Mobil, Royal Dutch Shell, Inpex, Philips and Total. This consortium has invested more than US$ 600 million in oil and gas exploration in the northern Caspian Sea. In 2001, OKIOC was renamed to Agip Kazakhstan North Caspian Operating Company (Agip KCO). In 2001, BP-Amoco and Statoil sold their shares to TotalFinaElf. In June 2002, Agip KCO announced estimated extractable oil reserves at 7-9 billion barrels (Terterov, 2004).

Another production sharing agreement signed in 1997 between Kazakhstan and the consortium of British Gas, Agip, and Texaco was to develop the giant Karachaganak oil and gas field in northwestern Kazakhstan. At present the Karachaganak consortium is led by BG Group Plc and Agip, which each hold a share of 32.5%. US based ChevronTexaco holds a 20% share and Russia's LUKoil holds a 15% share. This project is expected to run through 2036 with oil and gas production capacity peaking at 12 million tons per year and 25 billion

cubic meters per year, respectively. Karachaganak Petroleum Operating BV (KPO), the operator of the Karachaganak oil and gas condensate field, has signed contracts with the Greek-Italian consortium CCC Saipem for construction work at the field and with Parker Drilling Co., a US-based oil and gas drilling contractor, to conduct drilling operations. Reserves at the Karachaganak field, are estimated at 1.2 billion tons of oil and condensate and 1.35 trillion cubic meters of gas. Capital investments into the project amounted to US$ 4 billion to develop the Karachaganak gas condensate facility and increase liquid hydrocarbon production there to 51.3 million bbl per annum [8].

The third biggest oil extraction consortium, Kashagan, has been carrying out exploration drilling in the Kazakh sector of the Caspian since August 1999. According to Agip KCO, recoverable reserves at the Kashagan field are 11.2 billion bbl. The consortium will start to produce oil at this field around October 2008 and full commercial production will begin in 2009. Total development costs for the deposit are approximately US$ 29 billion. Agip KCO - is the field operator. Agip was chosen to operate the 11-block Kashagan production sharing contract area by project partners Shell Group, BG PLC, ExxonMobil Corp., ConocoPhillips, Total, Inpex and KazMunayGas in February 2001. About US$ 8 billion have been invested in the exploitation of Kashagan from 2001 to 2006. In July 2002 the contracting companies declared the commercial viability of Kashagan, in conjunction with KazMunaiGas. Agip KCO, on behalf of the consortium completed a 24- month period of geological and reservoir appraisals, as well as engineering and transportation studies and environmental and health and safety assessments. Some industry observers have suggested that recoverable reserves from the field could rise to 13 billion. With the Kashagan oilfield discovery, Kazakhstan hopes to triple its oil output in 15 years from its current level of 900,000 barrels per day to between 2 million and 3 million barrels a day. The early-oil phase of the Kashagan project is expected to produce 300,000 bpd [8].

In 1996 the Canadian Petroleum Company Hurricane Hydrocarbons bought state oil company Yuzhneftegas. Hurricane paid US$ 120 million and pledged to invest US$ 280 million. It owns a majority interest in the Shymkent refinery, with a 6.6 million tons annual oil processing capacity, and produces gasoline, diesel, boiler fuel, fuel oil, kerosene, jet fuel, and liquefied gas. The refinery provides about 50% of domestic petrochemicals. According to the company's policy by year end total investments in Kazakhstan should each US$ 1 billion (Terterov, 2004).

Kazakhstan has three main active export routes: northward, southward and westward. The Caspian Pipeline Consortium is a major westward export route. The carrying capacity of this pipe is planned to be expanded to 58 million tons by 2008, and to 67 million tons by 2011. The multinational ownership in the CPC is as follows: Russian Federation - 24%, the Republic of Kazakhstan - 19%, the Sultanate of Oman - 7%, Chevron Caspian Pipeline Consortium Company - 15%, LUKARCO B.V. - 12.5%, Rosneft/Shell Caspian Ventures Limited - 7.5%, Mobil Caspian Pipeline Company - 7.5%, Agip International (N.A.) NV - 2%, BG Overseas Holding Limited - 2%, Kazakhstan Pipeline Ventures LLC - 1.75%, and Oryx Caspian Pipeline LLC- 1.75% [8].

Today most of Kazakhstan's oil and gas continues to be transported through Russian-controlled routes. The main northward oil pipeline is Uzen - Atyrau - Samara. Given planned growth of oil production in Western Kazakhstan, there is a plan for a staged build-up of the pipeline's carrying capacity. Thus the Baltic Pipelines System is a promising route to increase Kazakhstan's oil supply to the market of East Europe and Baltic States. Other alternatives

include a pipeline to China and agreeing to future shipments through the US-backed Baku-Tbilisi-Ceyhan oil pipeline. Access to the Chinese and Asian Pacific market is seen as a promising means of diversifying Kazakhstan's portfolio of buyer. There is now a master agreement between the Kazakhstan Ministry of Energy and Mineral Resources and the CNPC (Chinese National Petroleum Corporation) to construct a pipeline running from Western Kazakhstan to Western China in the form of the Atasu - Alashankou pipeline which was launched in July 2006 (Denison and James, 2008; Saurbek, 2008).

CONCLUSION

Kazakhstan has had the highest cumulative net FDI inflows during the period from 1989 to 2006 of any CIS country, which has been estimated at US$ 28 192 millions. The largest share of FDI has been in the oil and gas sectors. Estimates indicate that from 1999 to 2001 three quarters of inward FDI flows went into the oil and gas sectors. Today FDI remains concentrated in the oil and gas sector which so far has accounted for 37.2% of all investments over the period 2000-2007. As next highest category real estate and renting accounted for 35% of cumulative FDI in the period 2000-2007 [7], which can be explained by the booming building campaign in the new capital city of Kazakhstan – Astana. Although the 2002 law about the Special Economic Zone "Astana new city" can be considered a success in terms of attracting foreign investment, investments in the services sectors, agriculture, education and health continue to be low.

With a heavily oil-dependent economy Kazakhstan continues to face considerable risks in terms of potential exposure to macro-economic shocks, currency exposures and "Dutch-disease" type symptoms. While the "multi-vectorial" diversification of oil investments has helped reduce some of the most immediate problems of Kazakhstan's resource-driven economy, it remains to be seen whether Kazakhstan's oil wealth will ensure the creation of a sustainable post-oil economy.

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[2] http://www.parlam.kz/Information.aspx?doc=1andlan=en-US
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BOOK REVIEW

Andrew Watterson

DOUBT IS THEIR PRODUCT. DAVID MICHAELS. OXFORD UNIVERSITY PRESS 2008. NEW YORK. ISBN: HB 978-0-19-530067-3. PP372

This is a critical, timely and enormously important book that brings together a wealth of material on 'how industry's assault on science threatens your health' – the sub title of the publication.

It is written by a respected epidemiologist who worked in the US Government as Assistant Secretary of Energy for Environment, Safety and Health and who understands very well the politics as well as the mechanics and science of the debates he explores in the book. US researchers have a long and distinguished track record, sadly lacking in many European countries, of documenting the history of occupational and environmental ill-health and this volume provides the latest excellent addition.

The focus of the book is very much on the USA but chapters draw on a range of case studies that relate to events and research for instance in Japan, Germany, Norway and the UK. The issues identified – from asbestos to the effects of aspirin, from the attack on climate change science through to a range of occupational and environmental hazards including 'popcorn lung' to tobacco and vinyl chloride monomer - also serve to illuminate problems of international relevance which sometimes produced similar and sometimes very different responses in the USA and Europe. Michaels for instance tells of how the carcinogen, beryllium, is currently on a Norwegian list of proposed carcinogens and the beryllium industry is mounting an uncertainty campaign yet again to stop the proposal.

The book starts with an introduction on 'sound science'. This is a catch phrase now adopted by some manufacturers to engage in strategies that all too often have subverted, obfuscated and delayed the implementation of effective work and wider environmental health measures where hazards and substantial risks had already been identified and often accurately assessed. A succinct exposition on how industry manufactured doubt is provided with regard to the tobacco industry. This is followed by several analytical chapters containing careful analysis and detailed references, on US industry and governmental assessments of and interventions on the debates relating to various hazards.

Topics tackled include workplace cancer and the failures to act on asbestos and the bladder carcinogen, betanaphthylamine, (used in the dye industry and later in the rubber industry as an antioxidant) which was first reported by German researchers in the 1890s. The failure of DuPont to address effectively exposure to known bladder carcinogens as early as

the 1930s is graphically described as is the lack of action in the USA and UK on benzidine, also a bladder carcinogen, when DuPont's medical director in Germany had recognised the hazard it presented and a Swiss-owned UK plant in the 1950s reported many cases of bladder cancer in its benzidine-exposed workers.

Whilst much of the narrative rightly identifies and explains the failings of industry and government to tackle consumer and industrial carcinogens, some effective advances in public health and environmental controls are also described especially in the USA in the 1970s. Scientists and regulators in the Occupational Safety and Health Administration used the precautionary principle, at least for a time, to control carcinogens and to improve standards.

The case studies provided are used to develop a convincing analysis in later chapters of how industry and government operated with regard to contesting evidence of threats to public health. Michaels describes in some detail, but with a wide and revealing range of examples - including beryllium, chromium in water, and carbon black - the 'enronization of science' in one chapter. He explores the subject in the context of some classic industry product defence mechanisms These involved and involve the use of the media, industry-funded research, industry-captured and indeed secretly industry-funded journals, flawed peer reviews, the use of consultants to deflect valid and substantial scientific messages, and industry-funded think tanks and front groups.

As Michaels observes 'the corporations and product defense industry they fund have done a superb job in marketing the "sound science" slogan and thereby undermining the use of scientific evidence in public policy' p58) . Particular attention is paid in one chapter to pull together the tricks of the trade that have been used in epidemiology to operate the 'sound science' defence and frustrate efforts to end or control better the exposure of workers to such carcinogens as benzene in the oil industry and vinyl chloride monomer . Other chapters looks at how some pharmaceutical trials have played down negative effects of drugs and only report the drug's positive benefits and how regulators failed to withdraw dangerous drugs.

In the US context Michaels argues that there has been ' an instititionalization of uncertainty' and he specifically argues US regulatory agencies "are intimidated and outgunned – and quiescent and that the Bush administration infiltrated government from top to bottom and shaped government science policies to their desires". The description resonates with what has been happening in many other countries where there is de facto deregulation of much public and occupational health and safety activity. Some UK regulatory agencies appear either cowed or captured by vested interests so that they no longer act either as advocates or guardians of public health. Evidence for the assessment in the US is provided by how the US dealt with climate change science, evidence that the pesticide atrazine was an endocrine disruptor, studies on abortion and breast cancer links, and studies dealing with lead levels in children.

Michaels concludes his book by exploring US remedies to the problems he identifies. He believes that the courts will have a major role in protecting public health because: "unless the regulatory system is radically restructured and strengthened, it will never have both the carrots and sticks necessary to ensure responsible corporate behavior" (p233). Hence litigation for victims may be the only defence for those damaged by industry and government. However, for this to work, he considers there needs to be openness in the legal system, rights of workers to sue employers, better compensation schemes, reduced powers for the federal government to overturn good state laws.

If the US regulatory system had shared consistent philosophy across agencies and agencies quickly exposed to the public gaze the 'corporate deceptions' that they had to deal with, again matters could be improved in Michaels' view. This needed to be linked to such things as 'full disclosure of any and all sponsor involvement in scientific studies', full disclosure by industry of their knowledge of their products' toxicity, better testing of substances before workers and the public were exposed, an end to 'rigged data analysis', and greater corporate accountability. The means to achieve these ends would include commitments to principles such as ALARA (as low as reasonably achievable), integrating worker and environmental health more closely, and making the states public health protection labs. Michaels' final observation goes back the precautionary principle and Bradford Hill. "Use the best science available: do not demand certainty when it does not and cannot exist" (p265).

So many of these solutions would be applicable globally when dealing with large transnational corporations that use the same materials and often the same or similar processes albeit sometimes 'dumping' out of date equipment and the most hazardous materials in developing countries. There may be differences in worker compensation systems and health, safety and environment laws – for instance the REACH legislation, however flawed, in Europe goes beyond current US approaches and US state toxics use reduction legislation does not exist in most of Europe.

The science may be familiar to some readers but the book's incisive and authoritative analysis of several of the political and economic mechanisms used to divert or mute the scientific message may not be. Also, the book brings together a highly pertinent range of case studies for the first time in one volume. The analysis offered has international relevance and deserves to be read by politicians and civil servants across the world as well as by trade unions and NGOs and acted upon.

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