Work, Food and Diabetes

Momentous technological changes have revolutionised the nature of work itself, seriously curtailing the work performed by large skeletal muscles in the legs, back and trunk (Hamilton et al. 2007: 2655, 2658-9). Contingent work (also known as precarious employment) has increased and disproportionately affects low wage, 'ethnic', and immigrant workers in developed countries. Outsourcing and the development of extended national and international contracting networks or supply chains diffuse employer responsibility for worker health and safety (Quinlan and Sokas 2009:S538). Material deprivation across the life span is central to diabetes type 2 (henceforth referred to as diabetes) equal to medical factors such as hypertension and the duration of the diabetes, in the lethal and cruel complications (Raphael et al. 2013: 128-9).

This paper will limit itself to developed countries and showcase neglected social themes that are present in the academic literature but in our view insufficiently emphasised while genetic and individualist explanations are at the centre and over-determine the debates. It will particularly explore indications in the literature that there is a close relationship between precarious work, available food choices, realistic opportunities for body movement in low socioeconomic locations and diabetes. It will also include technoscientists (to use Latour's 1987 term) as implicated in the epidemic rather than as neutral under-labourers just there to help. They continue as central participants in revolutionising technology (Shapin 2010) and food within implicit hierarchical frameworks. The way genetic scientists in particular have attached themselves opportunistically to social medicine has the potential, given the uncritical applause from the media to express a more extreme individualisation and genetisation of conditions such as diabetes. It brings us closer to the creation of a genetically vulnerable sub

class who can be discriminated against. It further marginalises valuable social explanations. The first section will canvass important themes in the literature. The next section will look for social clues as to why Indigenous peoples in modernist societies suffer the most with diabetes, at earlier ages of onset. Then changes technoscientists have brought to food will be examined, followed by suggestive studies about precarious and low quality work.

Genetic and social explanations

Some social scientists are highly sceptical of the turn to genetics. Hedgeco (2002: 9, 11, 16, 17, 23) for example has painstakingly reviewed key articles which purport to establish diabetes as a genetic disease. He found less certainty than claimed, a reliance on rhetoric and genetisation by stealth. The sociologist and medical doctor, Chaufan (2007: 1732) examines the misuse of the term 'genetic malfunction'. Even the latter does not exist without environments. Phenotypes are the structural, functional or behavioural trait of an organism. They vary with different environments for any given genotype or the DNA. Some environments are diabetes protecting, while poverty (an environment) and diabetes (an underlying phenotype) go hand in hand (Chaufan 2008: 282). She particularly takes issue with the common theory that an alleged 'genetic predisposition' to diabetes is colliding with freely chosen, unhealthy lifestyles centred on people from racial and ethnic minorities typically non-white (Chaufan (2007: 1732; 2008: 272). Rather than a genotype, in her view, the basic metabolic defect underlying type 2 diabetes is insulin resistance. Studies of the Dutch famine in World War II discovered that low birth weight in mothers when the foetal pancreas is developing, caused it to overwork in response to the mother's glucose and this developed insulin resistance (Chaufan 2008: 286). Chaufan's social explanation may seem controversial but she argues that this mechanism together with poorly controlled diabetes in the mother or poor nutrition in small children can combine over generations to produce increasingly high rates of diabetes. She suggests a sociological approach. Good physical and

mental health require at least access to proper nutrition, decent housing, equitable access to medical care, living wages, safe neighbourhoods, well-funded schools, not available to the high risk groups (Chaufan 2007: 1739).

The epidemic begins in First Nations peoples in the 1940s and provides vital clues to its social genesis. Arguably one of the most notorious recent dubious genetic explanations of diabetes comes from the population geneticist, Neel (Poudrier 2007: 238). He joined the long line of scientists who framed Indigenous people with explanations of inherent weakness in their bodies (Williams, Thorpe with Chapman 2003: 12-13). In 1962 he devised the research explanation of 'the thrifty gene' out of his own mind, values, limited life experience which conveniently enabled him to bypass the impact of colonisation. He posited that diabetes mellitus involved a quick insulin trigger, in response to periodic feast-or-famine conditions. The claim is that a genetic predisposition causes their bodies to fail to 'process' 'modern foods' and 'alcohol' and results in increasing rates of diabetes among Amerindian and other Aboriginal populations. In debunking this hypothesis, anthropologists argue 'white' populations have also feast/famine scenarios in their historic backgrounds. They regard 'thrifty gene' as an individualistic explanation likely to intersect with the historical marginalisation of Indigenous populations (Everett 2011: 1776). Unfortunately its influence has served to divert attention from the social, political and economic factors which have beset Aboriginal peoples related to deprivation: food scarcity, unemployment and long dependence on government rations, ongoing poor types of food, and the need now for food security and safe environments (Sahota 2012: 825; Poudrier 2007: 255). 'Thrifty gene' still has wide currency in technoscientific circles as a proven 'fact' (Poudrier 2007: 245, 247, 252). Some Indigenous people are actually harmed and stigmatised, feel fatalistic, helpless and frustrated (Sahota 2012: 829). Shown individual risk they are not ready to behave in terms of western

values of self-control and constant surveillance where groups have their own perspectives and purposes (Poudrier 2007: 255).

Wiedman (2012: 598) gives an alternative social explanation for the appearance of diabetes in the 1940s among the Cherokee. After an active physical lifestyle, by the 1860s, they were effectively prisoners of war on reserves; dance was forbidden or repressed. They were some of the first recipients in the world of processed food not sourced locally but instead transported and distributed long distances from New York and the northeast. Bolting wheat was subject to an industrial standardising process to cheapen and keep it much longer (Wiedman 2012: 599, 603). Dependent on high calorific food rations, they included fresh beef, bacon and bacon fat (later lard), flour, corn meal, coffee, salt, sugar and rice. NativeAmericans were out-produced in food they grew themselves, wheat, corn, oats, millet and fruit trees. From 1936-46, the Cherokee transitioned from subsistence agriculture to a cash economy and store-bought foods, from vigorous household activity to labour saving devices, walking, to low physical activity, in trucks and cars (Wiedman 2012: 597, 603). He extends his analysis to the Kiowa, the Comanche and Apache (Wiedman 2012: 604). The Indigenous physical body was contained, increasing the three risk factors for diabetes and the metabolic syndrome (Met S), physical inactivity, high calorific intake and chronic stress caused by multiple generations of 'historic trauma' and assimilationist domination (Wiedman 2012: 596, 602, 603). While not identical, similar historical dispossession, resulting trauma and stress, government reserves and rations occurred with long term consequences in Canada, Aotearoa/New Zealand and Australia (Rock 2003; Williams, Thorpe with Chapman 2003).

Many Australian Aboriginal communities were forced off their hunting and fishing areas and nutrient-dense diets to live on missions and reserves. They were subject to starvation and

semi-starvation, and racial feeding[1] (eg broken bread and scraped bones) after working for settlers (Sydney Morning Herald, August, 1880; Curthoys, 2001: 7). The state provided blankets and rations of white flour, offal, sugar, tea, tobacco. Later they were introduced to the sugar derivative, golden syrup 'we lived on the stuff'. Historically subject to a form of precarious work which Thorpe (Williams with Thorpe 1992) named 'colonised labour', they now have three to four times the rate of unemployment. They did not begin really to receive health care until the 1970s (Anderson 2006: 89-94). In the Druid study in Darwin, home ownership and employment status were associated with diabetes independently of one another (Cunningham et al. 2008: 30). It was more common in those renting (2008: 23). Their diabetes was not mediated by obesity to any great degree. Poor access to regulated employment ensures low SES status particularly in remote communities.

Food companies

Another potent social explanation argues that distant biotechnicians and food technology chemists constantly reconfigure whole foods into processed (functional) foods (Richards et al. 2011: 41). Foods once grown and delivered on a seasonal basis to local small-scale shopkeepers are now channelled through a host of unknown intermediaries as mass produced foods through global supermarkets. In the United States, the three primary sources of fat in the typical diet are red meat, plant oils and dairy products usually government subsidised as are corn, soy, sugar and wheat (Guthman and DuPuis 2006: 430). Fast food is central to the low-wage economy (2006: 441) modelling the low wages, and poorly paid shift workers become dependent on the cheap, convenience food. Growing dissatisfaction with the processed food and long supply chains has led to alternative food networks. In response, the industrial processes are disguised (Richards et al. 2011: 31, 43).

[1] Thanks to Adjunct Professor Raymond Evans for direction on starvation and racial feeding of Australian Aboriginal survivors.

Similarly Herrick (2009) gives a social and political account of how the food industry is acting to prevent its regulation by using the policy of 'corporate social responsibility' to promote functional foods of dubious health benefit. Responsible for about 15 per cent of total manufacturing revenue, the food industry puts considerable resources behind 'healthier choices', advertising, health and wellness research, support for physical activity programs, entry into the virtual realm and kits for the classroom. They employ their own research scientists and invest in sport as a powerful tool of brand value (Herrick 2009: 58-59). By promoting so called healthier products with some ingredients such as whole grains, snacks are advertised falsely as 'healthy' (Herrick 2009: 55, 56). These strategies have managed to infiltrate everyday talk with the notions of 'good' and 'bad' lifestyles using notions of consumer empowerment. The industry has moved the focus from foods to diet, to sedentarism and inappropriate individual choice (Herrick, 2009: 53).

Precarious Work and Food

This section will examine many of the studies that have now made the connection between diabetes and work, particularly shift work. One of the features of globalisation and the rise of contingent work has been the increase in the number of shift workers working outside regular daytime hours, affecting 20-25 per cent of employees (Szosland 2010: 287). Shift work interferes with the normal synchrony between light-dark cycles, sleeping and eating (Kivimaki et al. 2011). Rotating night shift work was an independent risk factor for impaired glucose metabolism and diabetes in male Japanese workers (Morikawa et al. 2005). The strongest evidence comes from two large, well-established long term cohort Nurses Health Studies in the United States (Pan et al. 2011). Extended periods of rotating night shifts are associated with a modestly increased risk of diabetes type 2 in women (Pan et al. 2011: 6).

One of the most recent, valuable studies by Dean et al (2010) details the impact of precarious work on food and eating. It takes us through the process of the desocialisation of food and meals involved with shift work in their study of immigrants particularly women from Mexico living in Texas. Shift work makes it difficult to prepare food and feed families at regular times (Dean et al. 2010: 581,585). They confront a hectic and unpredictable time environment where they may not make it to the shops. New forms of food choice and eating times are taking hold. A negotiation goes on between traditional, corn, beans and squash, and current foodways (Dean et al. 2010: 576). Because of their inflexible work schedules, they adapt to fast food and freezing food such as tortillas; they also choose the traditional dishes such as enchiladas which more easily adapt to the new ingredients. Learning about 'healthy food' from nutrition classes (not to refry beans) they derive other nutritional information from magazines and TV chefs. The price of fresh fruits and vegetables, organic and sugar-free foods make them difficult food options (Dean et al. 2010: 579).

African-American women have a much higher incidence, prevalence and complications of diabetes than men. Murrock et al's (2013: 174) qualitative study provides a great deal of insight into the complex interplay between the social nature of foodways intersecting with paid and unpaid work, and particularly the lack of fit with diabetes compliance and self management models. Biomedicine's current 'treatment' places responsibility almost entirely on people themselves for their own diabetes. Like the Mexican immigrant women, these women do shift work and multiple jobs. Family members tended not to assist with grocery shopping, planning or preparing meals. They juggle erratic work and family schedules, to facilitate shopping, preparing and serving meals, with demanding roles as mothers and grand-mothers (Murrock et al. 2013: 177-179). The women prepared food twice, an extra third of time for themselves and found fresh vegetables and fruit costly. It became impossible to

apply the diet to their specific life circumstances. They wanted ongoing and personalised education adapted to their difficult life circumstances (Murrock et al. 2013, 182).

People on diabetes regimens frequently have little motivation toward exercise for which they do not have the money, time or cultural interest. So called high risk migrant groups in Australia (Caperchione et al. 2011) notice the low levels of movement in everyday life intrinsic to modernism as Weinberg (2012) suggests. In their birth country, there was less reliance on cars and labour saving devices; going to shops in streets involved more walking because malls are walk minimising. They too talk about being too tired with the responsibility for paid and unpaid work. Yet when African-American women were given access to exercise they could relate to (Murrock et al. 2009) which also provided support, they engaged with gusto.

The 'diabetes diet' from social medicine ignores that food and drink are intimately bound up with social relations, cultural ideas, identities (Buttfield 2008) and critical lay epidemiologies which can include people knowing their choices are limited (Caplan 1996: 3, 8, 20; Broom 2003: 65). Foods have histories, and meals have a symbolic importance; they are a powerful metaphor for 'the family' (Caplan 1996: 6, 8) thus a central part of special family and other kinds of celebrations and cultural events. They want to participate and would starve the next day. By contrast, professionals can have a socially-ignorant, medicalised, reductionist view. Food is even described as a 'tool' for building skills and strategies to manage blood sugar and diabetes (Murrock et al. 2013: 177).

Conclusion

This paper has brought together social explanations, some relatively neglected especially about work, from the academic literature. The epidemic begins in First Nation peoples and draws attention to modernism/s, the labour, and movement minimisation wrought by the

constant revolutions in technology and the industrialisation of food, operating within highly constrained cultural and hierarchical expressions. The studies of poor working women suggest a lack of time or resources to engage in the required self-care for their labouring bodies within a gender order where they also care for everyone else (Franzway and Fonow 2011:25). Yet the genuinely concerned professionals locked within the individualistic framework see them as lacking in self-control (Murrock et al.2013:174). Rather than shaming and blaming the victim, we have focussed on larger social institutional practices particularly the impact of globalisation on the continuing depowering of workers from the deregulation of work. The deteriorating quality of work including shift work, together with the predations of the food industry, all assisted by technoscientists, is causing concomitant changes to eating within particular gender orders.

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