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An independent academic psychologist, based in England, who has written extensively on different areas of psychology with an emphasis on the critical stance towards traditional ideas.

A complete listing of his writings at <http://kmbpsychology.jottit.com> and <http://psychologywritings.synthasite.com/>.

1. LEFT-BEHIND CHILDREN AND HEALTH IN CHINA

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1.1. LEFT-BEHIND CHILDREN

The rapid economic growth of China in recent years has meant a massive migration to urban areas of adults looking for work ¹. Many of the adults are parents, and they do not take their children with them. Left-behind children (LBC) under eighteen years old, who are cared for by a single parent or other family members (usually grandparents (appendix 1A), but also aunts and uncles, and even friends), could number over sixty million (Li et al 2015).

LBC experience negative consequences from their status as compared to children raised by their parents ². These include physical health problems like low weight and poor growth ³, and anaemia (Li et al 2015) ⁴.

Li et al (2015) found that LBC were 20% more likely to get sick or develop chronic health conditions than those living with both parents. This conclusion was based on data from the China Health and Nutrition Survey since 1991 (with interviews every two years). Children were divided into four groups - both parents present, both parents absent, mother absent only, and father absent only ⁵.

In total, 13% of children with both parents working

¹ Modern China is very different to the "Third" World label. "Third World" was coined by Alfred Sauvy in 1952 to distinguish former colonies from the capitalist and socialist worlds, and this was replaced by "Global South" in the 1970s (Dirlik 2007).

² Studies of parental migration from developing to developed countries (eg: Mexico to the USA) have found contradictory results about the consequences for the LBC. For example, on the positive side, less likely to be underweight (Frank and Hummer 2006) versus a 40% higher risk of getting ill if the father absent (Schmeer 2009).

³ This may be due to poor diet because of lack of nutritional knowledge of carers or through lack of money. So, "when guardians are occupied with farm work in busy harvest seasons, they do not necessarily pay sufficient attention to food security and sanitation. In addition, without effective control on pocket money, some children relied on snack food rather than being given proper meals" (Ding and Bao 2014 p412).

⁴ Ding and Bao (2014) stated: "The role of family factors in developmental risk is widely acknowledged in general child psychology and psychiatry. It is also well understood that rapid socio-economic change can lead to stress on community and family systems that can place children at risk" (p411). Such children, it has been found around the world, have lower educational qualifications, and poorer health and lower social status as adults (Case et al 2005).

⁵ Previous studies did not always distinguish both parents absent from a single parent absent, and sometimes older siblings migrated was not separated from parental migration (Li et al 2015).

away had been sick, injured, or had a chronic health condition in the month before the survey compared to 5% of children with both parents present. The figures were 9% for father-absent children and 7% of mother-absent children. Girls suffered more than boys from parental absence, and younger children were more vulnerable.

In terms of mental health, LBC have been reported as more anxious and introverted, with "a certain passivity of response to unfavourable conditions which might reflect a damaged sense of self agency" (Ding and Bao 2014). These are problems of "over-control", while problems of "under-control" include increased anti-social behaviour (Ding and Bao 2014). Gao et al (2010) found unhealthy behaviours among adolescent LBC including smoking, alcohol abuse, pregnancy, and sexual and physical violence. This study in Guangdong also found Internet addiction and suicidal thoughts among boys, and binge drinking among girls.

1.2. APPENDIX 1A - GRANDPARENTS CARING FOR GRANDCHILDREN

Many grandparents play a role in caring for their grandchildren in the absence of parents. For example, a survey of ten European countries found that 58% of grandmothers and 49% of grandfathers had looked after a children under sixteen years old in the preceding year (Hank and Buber 2009) ⁶. While in the USA, one in four under fives had been cared for by grandparents in the preceding month (quoted in Di Gessa et al 2016a). In Britain, about two-thirds of grandparents provided some care to under sixteens, and 17% do so for more than ten hours per week (Wellard 2011).

How does caring for grandchildren impact on the grandparents? ⁷ Occasional carers of grandchildren self-report better physical and psychological health than full-time grandparent carers. But Di Gessa et al (2016a) pointed out that "grandparents who undertake intensive

⁶ Intensive grandparental childcare varies between European countries, from under 4% in Sweden to 25% in Greece, according to SHARE data (Di Gessa et al 2016b).

⁷ In relation to change in the modern world, Lloyd-Sherlock (2000) observed: "Historical research has largely scotched the myth of a 'golden age', when older people were the objects of veneration and enjoyed considerable power and prestige, both within the household and in society at large (Kertzer and Laslett 1995). Even so, there is general agreement that the accelerating pace of social, economic and political transformation has often had unfavourable consequences for the aged. Studies from developed countries conclude that increased access to education for younger age groups, and the growing technological sophistication of labour processes have rendered many of the more traditional skills of older people obsolete. The social isolation of older people has been worsened by the increased separation of workplaces from the home. Some studies from developed countries argue that the growing size of elderly populations has intensified competition for resources between them and other age groups" (p892).

grandparenting roles, in particular the custodial care of grandchildren, are often among the most disadvantaged and in the poorest health; in contrast, those who provide occasional or supplementary care tend to be better off and to report better health" (pp166-167). For example, Strawbridge et al (1997) found that permanent carers of grandchildren in California were more likely to have experienced negative life events (eg: marital and/or financial problems) in the previous twenty years than carers of parents or spouses.

This fits with the idea of cumulative advantage/disadvantage (CAD) and the lifecourse approach. Specifically, "inequalities in health are initiated early in life and increase with age as initial disadvantages and advantages accumulate and interact across the lifecourse" (Di Gessa et al 2016a p167) (appendix 1B).

Di Gessa et al (2016a) attempted to control for CAD in examining the health impact of caring for grandchildren. They used data from the Survey of Health, Ageing and Retirement in Europe (SHARE)⁸, which is a longitudinal study of adults in eleven Western European countries (eg: Germany, France, Sweden). The researchers used data from the interviews with participants over 50 years old undertaken in 2004-5 (baseline/1st wave), 2006-7 (2nd wave), and 2008-9 (third wave), which gave a sample of 8972 grandmothers and 6567 grandfathers at baseline (and 9137 participants in all three waves).

The outcome measure of health was self-reported on a five-point scale as well as the use of objective measures (eg: maximum grip strength; presence of severe long standing illness).

Care for grandchildren at wave 1 was scored for frequency in the previous twelve months, with 15 hours per week or daily as the cut-off for intensive/non-intensive childcare. This classified 1382 individuals as intensive, 3551 as non-intensive, and 4204 provided childcare.

Lifecourse experiences and CAD were measured in different ways, including features of childhood accommodation (eg: inside toilet), parent(s)/guardian(s) heavy drinker(s), and lifetime adverse events (eg: time in prison; homeless for more than one month). Three groups were distinguished for analysis - poorer socio-economic circumstances in life but good health (68% of respondents), poorer circumstances and health (7%), and good circumstances and health (25%).

Controlling for socio-economic and demographic characteristics, health status at baseline, and CAD, grandmothers who provided childcare at wave 1 (intensive and non-intensive) had significantly higher health scores

⁸ <http://www.share-project.org/>.

at waves 2 and 3 than grandmothers with no childcare. Among grandfathers, there was no significant relationship, but non-intensive carers were healthier than non-carers.

The researchers commented on the gender difference - "Grandmothers may perceive grandchild care as an addition to their family responsibilities, and may therefore experience and perform care differently from grandfathers, which in turn may have a different effect on health... It is however also possible that gender differences reflect the lack of power in the grandfather sample, as fewer grandfathers report looking after their grandchildren, or doing so intensively" (Di Gessa et al 2016a p173).

Though this was a longitudinal study which controlled for many variables in the statistical analysis, it was still difficult to establish a causal relationship between provision of grandchild care and health as "it is plausible that better health provides an impetus for looking after grandchildren and that this advantage is maintained over time" (Di Gessa et al 2016a p173).

It was not possible to know from the data if the grandparents had custodial duties or provided complementary caretaking to parents, nor the nature of the caregiving (including satisfaction, and quality of relationships). Generally, the measurements used may have been "sensitive to cultural norms and differences in definitions" (Di Gessa et al 2016a).

Grandparents may provide childcare for a number of reasons as summarised in table 1.1 (Di Gessa et al 2016b).

FACTORS	EXAMPLES
Individual characteristics of grandparents	Age Health Working or not Living alone or with partner
Characteristics of parent(s)/family	Age Working Lone parent Presence of older siblings
Contextual-structural	Formal childcare provision Labour market constraints Family norms

Table 1.1 - Factors influencing provision of grandparental childcare.

Di Gessa et al (2016b) used the SHARE data to investigate the role of different factors in grandparental childcare. Intensive childcare was provided more often for mothers under 40, who were unmarried, where both parents were in employment, and where no older siblings in family.

Grandmothers provided more intensive caregiving than grandfathers, and grandparents who were younger, married, had lower education levels, not in paid work, and were healthy more often did so.

In terms of contextual-structural factors, opportunities for women working was important. Mother working was positively correlated with grandparental childcare, while grandmothers working was negatively correlated. "Formal childcare and grandparental childcare seem to some extent to be substitutes: A parent is more likely to get intensive grandparental help as the percentage of children aged 0-2 not in formal care increases" (Di Gessa et al 2016b p148). The authors went on: "If mothers do engage in paid work in countries where they are not expected to be employed but to look after children, reliance on grandparental support is considerable. It would seem that where maternal paid work is not the norm, there are fewer childcare choices available to women in paid work, and/or in those countries preferences for within-family childcare are strong" (Di Gessa et al 2016b p150).

This study had no information about the work of parents (eg: non-standard hours), other types of informal childcare used (eg: friends), or other commitments of grandparents (eg: caring for spouse) (Di Gessa et al 2016b).

1.3. APPENDIX 1B - INEQUALITIES AND SOCIAL MINIMUM

"Societies in which basic institutions generate deprivation and inequality as a matter of course place considerable strains on the commitment of disadvantaged groups to these institutions. The social minimum is essential to prevent the 'strains of commitment' from becoming excessive" (Ulriksen and Plagerson 2016 p129) ⁹. Thus the need for social protection, which is "systematic intervention to help avert poverty ('insurance') or to improve the plight of the poor ('assistance') that is

⁹ "Given inequalities inherent in the working of society, sustaining a commitment to economic co-operation and to the institutions of the basic structure can be problematic. It is especially problematic for groups suffering from persistent disadvantage. For them, the 'strains of commitment' could become excessive" (Barrientos 2016 p155). Thus, the need for a "social minimum" - ie: an income guarantee by the government through family allowances or benefits during sickness or unemployment, say (Barrientos 2016). Such anti-poverty programmes in developing countries are "seen as 'development interventions' on a par with water pumps or malaria nets" (Barrientos 2016 p152).

ensured by the state against the background of an economic market and that is typically deemed required on grounds of distributive justice" (Metz 2016 p134). The State, though, may be indirectly involved through private agencies or non-governmental organisations ¹⁰.

But "social protection is not mere charity, in the sense of haphazard and unpredictable ways of giving on the part of private agents, or even a legislature ¹¹. Instead, it is essentially something designed to consistently improve people's quality of life (or 'avert risks' in the management jargon) in the face of an economic market that predictably fails to provide sufficiently for everyone" (Metz 2016 p135). Barrientos (2016) noted: "To be effective as a social minimum, it is important that the relevant programmes and policies maximise 'the life prospects' of disadvantaged groups, that they have a developmental orientation at their core" (p159) ¹².

How to distribute resources for a social minimum, say? ¹³ By "universalism" (a policy that covers everybody - eg: free healthcare for all) or "targeting" (aimed at specific individuals)? Devereux (2016) noted: "In practice, 100% targeting accuracy is a chimera, virtually impossible to achieve, which raises questions about fiscal efficiency (how much public money can acceptably be wasted on ineligible beneficiaries?) and social justice (is it morally acceptable to 'leave someone behind'?)" (p166) ¹⁴.

Devereux (2016) outlined the moral principles involved:

i) Equity principle - individuals receive based on their contribution. Best for social insurance.

ii) Equality principle - everybody receives the same (ie: "true universalism"). Best for essential social

¹⁰ Standing (2016) has recently talked about today as the "age of rentier capitalism", where money is made from "property rights" (eg: ownership of patents).

¹¹ Deacon (2009) observed: "States make globalisation every bit as much as globalisation makes states" (p371). This leaves room for ideas from "epistemic communities" ("networks of knowledge based experts"; Haas 1992), which can conflict - ie: in relation to social policy, "a war of positions within which intellectuals in and around the international organisations are engaged in a contest of paradigms and ideologies sometimes informed by empirical research" (Deacon 2009 p377).

¹² Global social policy involves a "plurality of actors" and a "plurality of sites of engagement and governance" (Riggirozzi and Yeates 2015).

¹³ "Dominant (international) frameworks risk pushing for universal norms to (social) development that in practice can be turn either conservative or a-contextual... In other words, claiming, framing and advancing norms and policies have been associated with the global power of Northern actors" (Riggirozzi and Yeates 2015 p221).

¹⁴ Grugel and Piper (2009) referred to the "right to development", while Hayden (2012) talked of the "human right to health".

services.

iii) Need principle - individuals receive based on their need (the basis of targeting). Best for assistance programmes.

Coady et al's (2004) review of 100 benefit programmes found that targeted programmes "provide approximately 25% more resources to the poor than would random allocation" (quoted in Devereux 2016).

Plagerson and Ulriksen (2016) distinguished between one- and multi-dimensional poverty, and one- and multi-dimensional inequality.

a) One-dimensional poverty - Income poverty, which can be overcome by "safety nets" (ie: cash or in-kind payments).

b) Multi-dimensional poverty - "composite poverty caused and experienced as a complex range of related deprivations in areas such as living standards, work, health, income, nutrition, education, services, housing and assets, power and security, among others" (Plagerson and Ulriksen 2016 p186).

The concept of the "social floor" or social minimum is applied here - ie: "an integrated set of social policies designed to guarantee income security and access to social services for all, paying particular attention to vulnerable groups and protecting and empowering people across the lifecycle" (Plagerson and Ulriksen 2016 p193).

c) One-dimensional inequality - Income disparity within a population, which can be overcome by redistributive policies.

d) Multi-dimensional inequality - a complex range of different inequalities. "Capability inequalities (in employment, health, nutrition, education, services, housing and assets, power, security, etc) intersect with categorical inequalities (in gender, class, caste, geography, ethnicity, etc), generating multiple layers of disadvantage" (Plagerson and Ulriksen 2016 p186).

Devereux and Sabates-Wheeler (2004) talked of "transformative social protection" (or a social "high" floor) which includes "protection (from deprivation), prevention (of likely deprivation), promotion (of livelihoods) and transformation (of disadvantaged conditions)" (Plagerson and Ulriksen 2016 p195).

1.4. REFERENCES

Barrientos, A (2016) Justice-based social assistance Global Social

Policy 16, 2, 151-165

Case, A et al (2005) The lasting impact of childhood health and circumstance Journal of Health Economics 24, 365-389

Coady, D et al (2004) Targeting outcomes redux World Bank Research Observer 19, 1, 61-85

Deacon, B (2009) From "safety nets" back to "universal social provisioning": Is the global tide turning? In Yeates, N & Holden, C (eds) The Global Social Policy Reader Bristol: Policy Press

Devereux, S (2016) Is targeting ethical? Global Social Policy 16, 2, 166-181

Devereux, S & Sabates-Wheeler, R (2014) Transformative Social Protection Brighton: Institute of Developmental Studies

Di Gessa, G et al (2016a) The impact of caring for grandchildren on the health of grandparents in Europe: A lifecourse approach Social Science and Medicine 152, 166-175

Di Gessa, G et al (2016b) What drives national differences in intensive grandparental childcare in Europe? Journals of Gerontology, Series B: Psychological Sciences and Social Sciences 71, 1, 141-153

Ding, G & Bao, Y (2014) Editorial perspective: Assessing developmental risk in cultural context: The case of "left behind" children in rural China Journal of Child Psychiatry and Psychology 55, 4, 411-412

Dirlik, A (2007) Global south: Predicament and promise The Global South 1, 1, 12-23

Frank, R & Hummer, R.A (2006) The other side of the paradox: The risk of low birth weight among infants of migrant and non-migrant households within Mexico International Migration Review 36, 3, 746-765

Gao, Y et al (2010) The impact of parental migration on health status and health behaviours among left behind adolescent schoolchildren in China BMC Public Health 10, 56

Grugel, J & Piper, N (2009) Do rights promise development? Global Social Policy 9, 1, 79-98

Haas, P (1992) Epistemic communities and international policy co-ordination International Organization 46, 1, 1-35

Hank, K & Buber, I (2009) Grandparents caring for their grandchildren. Findings from the 2014 Survey of Health, Ageing and retirement in Europe Journal of Family Issues 30, 1, 53-73

Hayden, P (2012) The human right to health and the struggle for recognition Review of International Studies 38, 569-588

Kertzer, D & Laslett, P (1995) Ageing in the Past. Demography, Society and Old Age Berkeley, CA: University of California Press

Li, Q et al (2015) The health of left-behind children in rural China China Economic Review 36, 367-376

Lloyd-Sherlock, P (2000) Population ageing in developed and developing regions: Implications for health policy Social Science and Medicine 51, 887-895

Metz, T (2016) Recent philosophical approaches to social protection: From capability to ubuntu Global Social Policy 16, 2, 132-150

Plagerson, S & Ulriksen, M.S (2016) Can social protection address both poverty and inequality in principle and practice? Global Social Policy 16, 2, 182-200

Riggirozzi, P & Yeates, N (2015) Locating regional health policy:

Institutions, politics, and practices Global Social Policy 15, 3, 212-228

Schmeer, K (2009) Father absence due to migration and child illness in rural Mexico Social Science and Medicine 69, 8, 1281-1286

Standing, G (2016) The Corruption of Capitalism London: Biteback Publishing

Strawbridge, W.J et al (1997) New burdens or more of the same? Comparing grandparent, spouse, and adult-child caregivers Gerontologist 37, 4, 505-510

Ulriksen, M.S & Plagerson, S (2016) The principles and practice of social protection Global Social Policy 16, 2, 127-131

Wellard, S (2011) Doing It All? Grandparents, Childcare and Employment: An Analysis of British Social Attitudes from 1998 and 2009 London: Grandparent Plus

2. WHO TO BELIEVE - TWO DIVERSE EXAMPLES

- 2.1. Introduction
- 2.2. Hydrolysed formula and allergy
- 2.3. Attitudes towards homosexuality
- 2.4. References

2.1. INTRODUCTION

The vast majority of research is carried out honestly, in the sense that any bias is unintentional (eg: methodological flaws). Occasionally there are cases of research fraud, where intentional bias was involved, varying from non-inclusion of certain information to fabrication of data.

Any conclusion or finding is as good as the methodology used. So, studies may contradict because of differences in approach and method. Thus, the need to critically evaluate methodology, which is often done in systematic reviews and meta-analyses.

2.2. HYDROLYSED FORMULA AND ALLERGY

Allergic and auto-immune diseases have increased in prevalence in many countries in recent years. One response has been to limit dietary exposure in infancy. For example, the US Food and Drug Administration (FDA) recommended hydrolysed formula (HF) ¹⁵ instead of standard cows' milk formula (SCMF) in the first six months of life (Boyle et al 2016).

A recent meta-analysis by Boyle et al (2016) has challenged this recommendation. The authors searched for studies up to July 2013. Only studies comparing HF of cows' milk with another type of cows' milk HF, non-hydrolysed cows' milk formula (ie: SCMF), or human milk were included. So, HF or milk other cows' milk were not included (eg: goats' milk, soya formula). Outcome measures included prevalence of allergic/atopic diseases (eg: asthma, eczema, food allergy) or auto-immune diseases (eg: coeliac disease, inflammatory bowel disease).

Thirty-seven eligible studies were found, of which twenty-eight were randomised controlled trials, 6 quasi-randomised controlled trials, and three controlled clinical trials. The data were pooled as is common in

¹⁵ This is cows' milk formula where the protein has been broken down, as this is the element in cows' milk that babies are believed to be allergic towards (<http://www.babycentre.co.uk/a9302/find-a-formula-thats-right-for-your-baby>; accessed 26/09/16).

meta-analysis, and overall risk estimates were calculated.

The researchers summed up: "In this systematic review of hydrolysed infant formula for reducing risk of allergic or autoimmune disease we found no consistent evidence to support a protective role for partially or extensively hydrolysed formula" (Boyle et al 2016 p11).

There was a major problem, which was that many of the "studies of allergic outcomes included in this review had unclear or high risk of bias and evidence of conflict of interest, often because of inadequate methods of randomisation and treatment allocation (selection bias) and support of the study or investigators from manufacturers of hydrolysed formula" (Boyle et al 2016 p9).

The quality of data produced by studies has potential bias due to the methodological design. Problems include:

i) Selection bias - eg: no random allocation of participants to groups.

ii) Assessment bias - eg: no blinding of groups to participants or outcome assessors.

iii) Attrition bias - eg: high drop-out from the studies.

There was also concern over a case of "possible research fraud" - Chandra et al (1989) - on the benefits of HF over SCMF for eczema. A correction was printed soon afterwards ¹⁶, and the article was retracted in 2015 ¹⁷.

This study has been included and "played an important role" in previous reviews of evidence, which are the basis of current recommendations by FDA, for example (Boyle et al 2016). The Chandra et al (1989) study had used one HF produced by Nestle (as did a number of other studies). Boyle et al (2016) noted that "risk of conflict of interest were unclear or high in most studies for allergic outcomes... but low or unclear in most studies for auto-immune outcomes" (p4).

Another problem for reviews of evidence is the dearth of studies. For example, in the case of HF reducing allergy to cows' milk, one study with methodological weaknesses has dominated the conclusion in previous reviews, whereas Boyle et al (2016) found other studies as well and together there was no evidence for the claim.

¹⁶ BMJ (1989) 299, 896.

¹⁷ BMJ (2015) 351: h5682. An internal inquiry at Chandra's university has found "scientific misconduct" (eg: "there are no hospital records to support the study").

2.3. ATTITUDES TOWARDS HOMOSEXUALITY

Is there a change in attitudes towards homosexuality, particularly in educational institutions?

The traditional view is that "heteromascularity" (Anderson et al 2012) means that "Even little boys are required to prove that they are 'real boys' in ways that mark them as masculine, even macho, and therefore (by definition) heterosexual" (Epstein et al 2001 quoted in Anderson et al 2012). The upshot is homophobia. Anderson et al (2012) observed that "the stigma associated with men's homosexuality (as an identity or behaviour) reflects more than just the dislike of men having sex with other men: male homosexuality is also disparaged by others because it has been conflated with a perceived lack of maleness and the adoption of feminine traits. Because of this conflation, both boys and men wishing to be perceived as masculine by their peers must necessarily disengage from those behaviours that have been socially coded as gay" (p421) ¹⁸.

However, Anderson et al (2012) reported an example that challenged this idea - young, self-identified heterosexual men kissing each other. The researchers recruited three samples - 107 students at a university in south-west England, sixteen members of student football teams at another English university, and twenty-two 16-17 year-olds at a pre-degree level (6th form) college. The semi-structured method was used (table 2.1).

In total, 89% of respondents had briefly kissed another heterosexual male friend on the lips. Same-sex social kissing was more common among team sports players. For example, "Darren" said: "Kissing happens all the time in football [soccer]. Loads of guys kiss on the lips after scoring a goal; you'll see it on TV, too" (Anderson et al 2012 p424).

"Kissing camaraderie" (Anderson et al 2012) was also reported at other social events. For example, "Pat" talked about a night club: "It's not like if you walk in you're going to see wall-to-wall guys kissing... But, when you're with your mates, yeah, you give 'em a kiss. So I might kiss a few guys throughout the night" (p425).

¹⁸ The "one drop theory of race" (Harris 1964) has been applied here. Originally, this theory argued that in a dominant White society, say, anyone with even a portion of non-White in their ancestry will be viewed as wholly non-White (Anderson et al 2012). Applied to homosexuality, a single "gay" behaviour by a heterosexual man labels him as homosexual, but not the other way around. As Schwartz (1995) said: "We have demonised the power of homosexuality so that we assume it to be the greater truth of our sexual self - as if one drop of homosexuality tells the truth of self, while one drop of heterosexuality in a homosexual life means nothing" (quoted in Anderson et al 2012).

- How do you identify: straight, gay, bisexual or other?
- I notice that straight men now kiss each other on nights out or in pubs. Have you ever kissed another friend, even just once this way?
- I've also noticed that sometimes straight men pull one another, oftentimes at clubs, and oftentimes as a joke. Have you ever seen this?
- What do you think your father [brother, friends back home] might say if he knew you have kissed other guys this way?

(Source: Anderson et al 2012 appendices 1 and 2 p429)

Table 2.1 - Examples of standard questions used by Anderson et al (2012).

Anderson et al (2012) commented:

One factor most of the men in our study shared was that they did not consider their kissing a sexual act. Instead, participants likened these types of brief kisses to a strong embrace or other exuberant ways of showing affection for a close friend, at appropriate times. 'Tim', said, 'It's no more a sexual act than kissing your father', and 'Tom' argued, 'It's like shaking hands. Well, it's more than that, but it's the same attitude'. For the young men in our study, this type of kiss has been socially stripped of sexual significance. Whereas kissing a male friend on the lips would once be coded as a sexual act, the symbolic meaning of kissing has been differently interpreted by our informants. Here, kissing was consistent with a normal operation of heteromale intimacy (p425).

But it was clear that this behaviour was university-based. When asked about kissing non-university friends at home, "Ben", for instance, replied: "No way. People would definitely think we were gay" (p426).

Forty-eight interviewees admitted to extended kissing, usually as "part of the repertoire of jocular banter", and often under the influence of alcohol. "Although the students who engaged in this behaviour maintained that they were not sexually attracted to, nor did they receive sexual pleasure from this type of kissing, they were nonetheless aware that others could interpret the meanings of such behaviour differently in their shared public space. Perhaps it is because of this awareness that these men played up their kissing, exaggerating it, performing it for heterosexualising attention in the form of homosocial banter" (Anderson et al 2012 p428).

Anderson et al (2012) interpreted the findings to fit with the inclusive masculinity theory (Anderson

2009), "which postulates a drastic reduction in cultural homophobia among youth in Britain and American educational settings today... Quite simply put, young men in these geographical contexts are not as bothered by homosexuality as they once were, and this means that they are less likely to police gendered behaviours with homophobia" (Anderson et al 2012 p428).

Rinehart and Espelage (2016) present a negative picture in their study of homophobic name-calling and sexual harassment in US schools. Around 1500 teachers and staff, and over 3600 eleven to thirteen year-olds in thirty-six middle schools in the mid-West were surveyed.

The teachers and staff were asked about the school environment with questions about the willingness of students and teachers to intervene in situations of teasing or spreading rumours, for instance. The students completed adapted version of two questionnaires:

a) Homophobic Content Agent Target Scale (Potteat and Espelage 2007) - Five items about the use of names (homo, gay, lesbo, fag, dyke) in the last thirty days, and five items about being called those names. The choice of responses are "never" (1) to "7 or more times" (5).

b) American Association of University Women (AAUW) Sexual Harassment Survey - 10 items covering unwanted verbal sexual violence through to sexual contact (scored as "never" (1) to "10 or more times" (4)).

Altogether, 34% of students admitted to homosexual name-calling, and 31% to being victims of it. At least one type of sexual harassment was admitted by 8% of participants and experienced by 15%.

There was less name-calling and harassment at schools where teachers perceived greater school support for bullying prevention, and where there were positive interactions between staff and students, and gender equity.

Rinehart and Espelage (2016) commented: "The percentages of both perpetration and victimisation indicate that students are certainly experiencing homophobic and sexual harassment; it is probable that students are also bystanders in at least some of these events. Therefore, the process of learning through observation and imitation could well be active in many of these schools" (p218).

The two studies were both cross-sectional (ie: "one shot in time"), and a longitudinal study would be needed to show change in attitudes. However, there were variations in methodology between them which could explain the difference in findings (table 2.2).

Issue	Anderson et al (2012)	Rinehart & Espelage (2016)
Country	England	USA
Institution	University, 6th form college	Middle school
Age group (years)	16-25	11-13
Method	Semi, unstructured interviews	Structured questionnaires
Type of data	Qualitative	Quantitative
Gender	Male	Both
Focus	Same-sex kissing	Homophobic name-calling and harassment

Table 2.2 - Main differences between Anderson et al (2012) and Rinehart and Espelage (2016).

2.4. REFERENCES

Anderson, E (2009) Inclusive Masculinities: The Changing Nature of Masculinities New York: Routledge

Anderson, E et al (2012) "I kiss them because I love them": The emergence of heterosexual men kissing in British institutes of education Archives of Sexual Behaviour 41, 421-430

Boyle, R.J et al (2016) Hydrolysed formula and risk of allergic or autoimmune disease: Systematic review and meta-analysis BMJ 352: i974

Chandra, R.K et al (1989) Influence of maternal diet during lactation and use of formula feeds on development of atopic eczema in high risk infants British Medical Journal 299, 228-230

Epstein, D et al (2001) Boys and girls come out to play: Making masculinities and femininities in school playgrounds Men and Masculinities 4, 158-172

Harris, M (1964) Patterns of Race in the Americas Westport, CT: Greenwood Press

Poteat, V.P & Espelage, D.L (2007) Predicting psychosocial consequences of homophobic victimisation in middle school students Journal of Early Adolescence 27, 175-191

Rinehart, S.J & Espelage, D.L (2016) A multi-level analysis of school climate, homophobic name calling, and sexual harassment victimisation/perpetration among middle school youth Psychology of Violence 6, 2, 213-222

Schwartz, P (1995) The science of sexuality still needs social science Scientist 9, 12

3. SCIENCE AND TECHNOLOGY IMPROVING SPORT PERFORMANCE

- 3.1. Electrical stimulation of brain and performance
- 3.2. Nutritional ketosis
- 3.3. Genetic testing and talent identification
- 3.4. Appendix 3A - Hypothalamus
- 3.5. Appendix 3B - Transcranial direct current stimulation and mental disorders
- 3.6. References

3.1. ELECTRICAL STIMULATION OF BRAIN AND PERFORMANCE

Targeted electrical stimulation of the brain is being tried as a way to improve elite athletes' performance ¹⁹.

A US company has produced a device that stimulates the motor cortex, which is the area of the brain related to physical skills. It has been tested with seven elite Nordic ski jumpers in the USA. The skiers practised jumping onto an unstable platform while receiving transcranial direct-current stimulation (tDCS) ²⁰ or a sham procedure. The former group improved their performance by 70-80% over two weeks (practising four times a week) (Halo Neuroscience no date quoted in Reardon 2016) ²¹.

A study with twelve volunteers found that stimulating the motor cortex area that controls leg function led to a longer period of pedalling on a stationary bicycle without feeling tired. The tDCS group could pedal for two minutes longer, on average, than the sham group, and they rated themselves as less tired (Lex Mauger 2016 quoted in Reardon 2016). Note that "there was no difference in heart rate or the lactate level in the muscles between the treatment and control groups. This suggests that changes in brain perception, rather than muscle pain or other body feedback, drove the improved performance" (Reardon 2016 p294).

There are ethical and methodological concerns about the use of electrical stimulation of the brain in this cortex, including (Reardon 2016):

- i) The unintended effect of intense electrical stimulation of the brain.

¹⁹ More invasive electrical stimulation has been used in animal studies (appendix 3A).

²⁰ tDCS has been used as a treatment for mental disorders (appendix 3B).

²¹ In a study with mice, Monai et al (2016) reported that tDCS produced sudden surges in calcium flow in neurons in the brain, which appears to boost connections between neurons (Adee 2016)..

- ii) The long-term effects of stimulating the brain.
- iii) Individual variations in response to stimulation.
- iv) Difference in response of the same individual on different days.
- v) The fear of undetectable "brain doping" by athletes versus scepticism about its actual effect.

3.2. NUTRITIONAL KETOSIS

Ketosis involves ketone body ²² metabolism ²³, and it is used by the body during starvation (calorie deprivation or energy deficit) or prolonged exercise. It is highly efficient in providing energy (Cox et al 2016).

Using this process in the form of ketone ester-based (KE) diet can benefit endurance performance in athletes. Thirty-nine endurance athletes were tested in five studies with KE in the UK by Cox et al (2016).

Study 1 - KE before 45 minutes of cycling (on an exercise bike) at 40% or 75% maximum ²⁴ versus at rest.

Study 2 - One hour of cycling at 75% maximum after consuming beverage with calories from carbohydrates, KE or fat.

Study 3 - As Study 2, but included a control group with no calories beforehand.

Study 4 - Two hours of cycling at 75% maximum after consuming half the beverage with calories from carbohydrates and KE, and half during the exercise.

Study 5 - One hour of cycling at 75% maximum followed by an unexpected thirty minutes of maximum speed after drinks with KE or carbohydrates. The participants cycled the equivalent of 2% further in the additional thirty minutes after the KE drink.

Each study was repeated measure with one week between each condition. Participants were blind to details of task and the beverage content was double-blinded. Only some of the athletes participated in each study (eg: Study 5 = six males and two females).

²² These are produced by the liver from fatty acids.

²³ As opposed to energy from blood glucose.

²⁴ Each individual's maximum capacity had been established previously.

Cox et al (2016) summed up: "In some ways, the demands of endurance exercise parallel (albeit more rapidly) the metabolic constraints pertinent to survival in starvation, placing a premium on glucose reserves and effective oxidative respiration. We have shown here the benefit of inducing ketosis and how the combination of metabolic alterations achieved by nutritional ketosis may create a potentially advantageous physiological state, distinctly different from that of endogenous ketosis" (p266). The researchers were upbeat that "nutritional ketosis may help to unlock greater human metabolic potential".

But they warned: "Athletic adaptations to harness greater circulating fuels for combustion (including ketones) are well known..., making athletes ideally placed to capitalise on altered substrate provision. However, it remains unclear whether similar changes to those shown here can occur in untrained individuals" (Cox et al 2016 p266). Also they noted that it may not be beneficial for all sports.

3.3. GENETIC TESTING AND TALENT IDENTIFICATION

Electrical stimulation to improve performance is part of the movement of technologies and ideas from recent scientific developments into sport.

In recent years, there has been a rise in direct-to-consumer (DTC) tests to identify children's athletic potential based on certain genes ("performance-enhancing polymorphisms"; PEPs ²⁵) (Camporesi and McNamee 2016). The tests are presented as part of talent identification generally. "On the basis of the results of these tests parents and coaches may identify, plan, and invest in the children's future" (Camporesi and McNamee 2016 p191).

The American Academy of Pediatrics and the American College of Medical Genetics and Genomics recommended in 2013 against the use of such tests because of "lack of oversight on test content, accuracy and interpretation" (quoted in Camporesi and McNamee 2016). While in the UK in 2015, the "British Journal of Sports Medicine" said in a consensus statement: "With regard to predicting future sporting performance, the scientific foundation is extremely limited and largely non-existent. There is concern among the scientific community that the current

²⁵ More than 200 advantageous genetic variations have been identified that elite sportspeople have, particularly endurance athletes (eg: mitochondrial variations that increase aerobic capacity and endurance) (Camporesi 2016). For example, ACTN3 gene linked to slow-twitch fibres used in endurance races in one version, or fast-twitch fibres as in sprinting in another. This idea has been challenged: "the fact that there is a higher frequency of ACTN3 polymorphism in elite sprinters does not allow prediction of athletic performance, as muscle performance is merely one component of athletic performance" (Camporesi and McNamee 2016 p192).

level of knowledge is being misrepresented implicitly for commercial purposes" (quoted in Camporesi and McNamee 2016).

Caulfield (2011) classified DTC genetic tests generally as "marginally pertinent", "vaguely predictive" or "clearly preposterous". Camporesi and McNamee (2016) stated: "At best DTC genetic tests for talent identification may be classified as marginally pertinent because, despite advances in our knowledge of the genetic basis of sports performance, the tests' ability to predict future performance is very weak, if not non-existent" (p192).

More widely, Camporesi and McNamee (2016) questioned the assumption that certain genes are linked to athletic excellence. They also noted the problem of transferability: "PEPs are identified in elite athletes, and their significance is then extrapolated to a completely different population, ie: children, often of a different ethnic background" (p192).

But are genetics-based tests not just another form of talent identification? Camporesi and McNamee (2016) felt not as the tests are "often thought of as particularly powerful because of the exceptional 'deterministic' status still accorded to genetic information by the public" (p192). Such deterministic ideas could be seen as infringing the child's "right to an open future" (Feinberg 1980) (ie: the choice to become the adult they will become) (Camporesi and McNamee 2016).

Camporesi and McNamee (2016) summed up: "DTC genetic tests to identify talent in sport do not predict future sports performance, while they can 'discourage parents and children from pursuing a particular sport interest if the genetic test does not confirm specific talents', raising the very real possibility that parents and children may make 'life-decisions based on mistaken beliefs about the relevance of the tests' [Caulfield et al 2016]" (p194).

3.4. APPENDIX 3A - HYPOTHALAMUS

The role of the hypothalamus in motivation to eat and to stop has been studied in animals by altering they hypothalamus. This has been done by lesioning studies (ie: removal or damage to the area; eg: Goto et al 1980), or electrical stimulation (ie: micro-electrodes placed in the hypothalamus; eg: Davies et al 1974). These are invasive techniques, which alter the hypothalamus permanently in some way.

More recently, techniques have been developed to produce temporary changes. For example, Stanley et al

(2016) reported the use of nanoparticles than could be controlled by radio waves or magnetic fields. Simplistically, neurons in the hypothalamus could be turned on and off like a switch.

3.5. APPENDIX 3B - TRANSCRANIAL DIRECT CURRENT STIMULATION AND MENTAL DISORDERS

tDCS is a non-invasive neuromodulation method, which seeks to "selectively disrupt patterns of neural activity that are associated with symptoms of illness" with low-amplitude direct currents to the brain (Kekic et al 2016).

It has grown in popularity in the 21st century for different mental disorders, particularly depression. What is the clinical efficacy of tDCS for psychiatric disorders?

Kekic et al (2016) performed, what they claimed was, the first systematic review of tDCS with all mental disorders. Sixty-six studies were found up to December 2015 that met the inclusion criteria. Six aspects of methodology were assessed for each study - selection of participants, study design, control of confounding variables, blinding, data collection methods (eg: scoring of improvement), and drop-outs. The overall assessment of methodology was rated weak, with blinding in particular poorly controlled. This included hiding from the participants whether there were receiving tDCS or a sham version (single blind) and from the administrators of tDCS (double blind). Kekic et al (2016) noted that "sham tDCS frequently exerts some degree of influence over outcomes" (ie: the placebo effect).

There were 23 randomised controlled trials among the sixty-six studies, and data from them "suggest that tDCS interventions comprised of multiple sessions can induce enduring therapeutic effects in patients with depressive disorders and schizophrenia" (Kekic et al 2016 p82).

Kekic et al (2016) highlighted a number of general issues, including:

i) Individual differences in response to tDCS - Widdows and Davis (2014) highlighted "qualitative differences in anatomy are sometimes seen in people with mental illness compared to healthy controls; for example, patients with eating disorders have shown low levels of sub-cutaneous adipose tissue around the head and altered cortical folding. These factors are likely to have an impact on the effects of tDCS-induced electrical currents, therefore extra caution ought to be exercised in such patient groups" (Kekic et al 2016 p84).

ii) Illness severity - eg: tDCS more beneficial for

severe than moderate or mild major depression.

iii) Confounders - eg: nicotine reduces efficacy for individuals with schizophrenia.

iv) Medication status of patients.

v) Parameters of tDCS - eg: electrode positioning on head; duration of stimulation).

vi) Safety issues - Recommended as less than 2.5 mA, 20-60 minutes per session, once or twice a day maximum. Kekic et al (2016) commented: "Only mild and transient side-effects - such as itching, tingling, and headache - have been reported..., leading to the conclusion that tDCS is a relatively safe procedure. However, the absence of serious adverse events is not irrefutable evidence that the technique is unequivocally benign, and a number of ethical and safety issues remain" (p83).

For example, "cognitive enhancement mediated by tDCS can occur at the expense of other cognitive functions..., yet the potential for collateral behavioural impairments arising from the use of tDCS in psychiatric research has been largely overlooked" (Kekic et al 2016 p83).

vii) Ethical issues - Kekic et al (2016) pointed out that "tDCS has recently garnered considerable 'neurohype' in the media as a portable, painless, inexpensive, and safe therapeutic device. This positive portrayal has the potential to shape the public's risk-benefit perceptions, promote a therapeutic misconception, and have an impact on the uptake of this technology... Without some degree of 'neuromodesty' (Morse 2012), desperate and vulnerable mentally ill patients may overestimate the benefits and underestimate the risks of tDCS" (p84).

3.6. REFERENCES

Adee, S (2016) Is calcium boost behind brain zap effects? New Scientist 2/4, p10

Camporesi, S (2016) Why Caster Semenya and Dutee Chand deserve to compete (and win) at Rio 2016 The Conversation (<https://theconversation.com/why-caster-semenya-and-dutee-chand-deserve-to-compete-and-win-at-rio-2016-63727>; accessed 18/08/16)

Camporesi, S & McNamee, M.J (2016) Ethics, genetic testing, and athletic talent: Children's best interests, and the right to an open (athletic) future Physiological Genomics 48, 3, 191-195

Caulfield, T (2011) Predictive or preposterous? The marketing of DTC genetic testing Journal of Science Communication 10, 3

Caulfield, T et al (2016) Marginally scientific? Genetic testing of children and adolescents for lifestyle and health promotion Journal of Law and Biosciences 2, 3, 627-644

Cox, P.J et al (2016) Nutritional ketosis alters food preference and

thereby endurance performance in athletes Cell Metabolism 24, 2, 256-268

Davies, R et al (1974) Enhancement of feeding produced by stimulation of the ventromedial hypothalamus Journal of Comparative and Physiological Psychology 86, 3, 414-419

Feinberg, J (1980) A child's right to an open future. In Aiken, W & LaFollette, H (eds) Whose Child? Children's Rights, Parental Authority and State Power Totowa, NJ: Littlefield, Adams & Co

Goto, Y et al (1980) Effect of ventromedial hypothalamic lesions on the secretion of somatostatin, insulin, and glucagon by the perfused rat pancreas Metabolism 29, 985-990

Kekic, M et al (2016) A systematic review of the clinical efficacy of transcranial direct current stimulation (tDCS) in psychiatric disorders Journal of Psychiatric Research 74, 70-86

Monai, H et al (2016) Calcium imaging reveals glial involvement in transcranial direct current stimulation-induced plasticity in mouse brain Nature Communications 7, article 11100

Morse, S.J (2012) New therapies, old problems, or, a plea for neuromodesty AJOB Neuroscience 3, 60-64

Reardon, S (2016) Performance boost paves way for "brain doping" Nature 531, 7594, 283-284

Stanley, S.A et al (2016) Bidirectional electromagnetic control of the hypothalamus regulates feeding and metabolism Nature 531, 7596, 647-650

Widdows, K.C & Davis, N.J (2014) Ethical considerations in using brain stimulation to treat eating disorders Frontiers in Behavioural Neuroscience 8, 351