Things I would have found it useful to have been told when I was a young researcher

Andrew Oswald andrew.oswald@warwick.ac.uk

These notes are based on a talk given every few years at Warwick to young faculty and researchers across all disciplines.

If everyone likes your work, you can be certain that you haven't done anything important. Conflict and pain go with the territory -- that of changing how a profession thinks and furthering what we know about our world. The pressures on young researchers are to conform, to accept fashionable ways of analyzing problems, and above all to please senior professors and their own peers. Unfortunately this is bad for scientific progress. [This fact is perhaps the single most helpful thing I have learned, and would pass on to any young researcher who wishes to listen to advice, which I confess is very probably what I would not have done when I happened to be in my late twenties.]

The main difference between world-class researchers and sound researchers is not intellect; it is energy, single-mindedness, more energy, and the ability to withstand what will sometimes feel like never-ending disappointment, tiredness and psychological pain. Tenacity is almost everything. [This is the second key thing I feel I have learned.]

Everyone is good at something, and poor at other things. Perhaps think that through a bit about yourself. Try not to beat yourself up about the parts you are not so great at. I know one ordinary, down-to-earth British man about my age who initially was refused entry into university and became a lab technician because could not pass French O level no matter how hard he tried. Things turned out reasonably OK for him*. If necessary, you can team up eventually in research with people with complementary skills.

Clarity of writing is more important than any other single thing.

Having a really good Abstract and title are surprisingly helpful if you want to get past the desk-rejects and eventually have your work heavily cited.

I would advise anyone to start writing articles, and submitting them to journals, as early as possible. Some young researchers get stuck polishing articles for years (way beyond the point of efficiency, because after all you can use the time to work on something else).

Submit to the very best journals in the world, and accept the pain of rejection letters. Keep on doing so.

Try to go to all the seminars you can, in all areas of your discipline. If you concentrate narrowly at this age, you have little chance of achieving vision. I reckon the reason most researchers burn out in middle age is that they have gone obsessively narrow in their youth. Adaptability pays off, in my view, and you may work for half a century. Forty years from now, you won't believe how quaint and poor the thinking was in your discipline in the year 2015.

Aim for a balance between humility+open-mindnedness (80% perhaps) and arrogance+sheer-self-belief (20%). Some referees will reject your work even though it is outstanding. You can't take the human out of human beings.

I would advise people not to be dragged into whatever seems trendy this year. The issue probably began 10 years ago in some research corridor on the other side of the world and, at the absolute frontier, is already on its way out. The best idea is to work on important, timeless, deep questions that most people have not thought of or think are too hard. If people say to you "but nobody works on Z", then you may have a chance to be able to do something of lasting value.

At this stage you have the opportunity to fashion a whole stream of work about whatever you believe is important in the world. Think long-term. Follow your own agenda not that of the herd – that would be my own advice for what it is worth. It's not easy to stand against the herd, though.

There is no single way to be a successful researcher doing work that matters. Somehow or other, you have to learn to be yourself.

Try to remember that you have extraordinary intellectual talent. Do your best not to forget that -- even when tempted and faced with endless rejection.

Work on what you believe in; it will help sustain you.

Do come and chat to me if it ever helps.

Best of luck.

Andrew Oswald Professor of Economics and Behavioural Science

* a few years ago he got the Nobel Prize in Medicine and Physiology

From the original talk: Examples of title and abstract from some of the most influential Warwick work done over the REF period 2008-2013:

(I found it interesting to discover that, although we cannot expect technical writing to be instantly understandable to a lay person, there is a degree of simplicity and clarity in these Abstracts. My source here is the Thomson Web

of Knowledge database, which is available in a few seconds from any Warwick computer.)

Intrinsic Response of Graphene Vapor Sensors

Author(s): Dan, YP (Dan, Yaping)^[1]; Lu, Y (Lu, Ye)^[2]; Kybert, NJ (Kybert, Nicholas J.)^[2,3]; Luo, ZT (Luo, Zhengtang)^[2]; Johnson, ATC (Johnson, A. T. Charlie)^[1,2]

Source: NANO LETTERS Volume: 9 Issue: 4 Pages: 1472-1475 DOI: 10.1021/nl8033637 Published: APR 2009

Times Cited: 177 (from Web of Science)

Abstract: Graphene is a two-dimensional material with extremely favorable chemical sensor properties. Conventional nanolithography typically leaves a resist residue on the graphene surface, whose impact on the sensor characteristics has not yet been determined. Here we show that the contamination layer chemically dopes the graphene, enhances carrier scattering, and acts as an absorbent layer that concentrates analyte molecules at the graphene surface, thereby enhancing the sensor response. We demonstrate a cleaning process that veriliably removes the contamination on the device structure and allows the intrinsic chemical responses of the graphene monolayer to be measured. These intrinsic responses are surprisingly small, even upon exposure to strong analytes such as ammonia vapor.

Convicts and Coolies: Rethinking Indentured Labour in the Nineteenth Century

Author(s): Anderson, C (Anderson, Clare)

Source: SLAVERY & ABOLITION Volume: 30 Issue: 1 Pages: 93-109 DOI:

10.1080/01440390802673856 Published: 2009

Times Cited: 7 (from Web of Science)

Cited References: 27 [view related records] Citation Map

Abstract: This article seeks to shift the frame of analysis within which discussions of Indian indentured migration take place. It argues that colonial discourses and practices of indenture are best understood not with regard to the common historiographical framework of whether it was 'a new system of slavery', but in the context of colonial innovations in incarceration and confinement. The article shows how Indian experiences of and knowledge about transportation overseas to penal settlements informed in important ways both their own understandings and representations of migration and the colonial practices associated with the recruitment of indentured labour. In detailing the connections between two supposedly different labour regimes, it thus brings a further layer of complexity to debates around their supposed distinctions.

Do Humans Have Two Systems to Track Beliefs and Belief-Like States?

Author(s): Apperly, IA (Apperly, Ian A.)[1]; Butterfill, SA (Butterfill, Stephen A.)[2]

Source: PSYCHOLOGICAL REVIEW Volume: 116 Issue: 4 Pages: 953-970 DOI: 10.1037/a0016923 Published: OCT 2009

Times Cited: 60 (from Web of Science)

Cited References: 186 [view related records] Citation Map

Abstract: The lack of consensus on how to characterize humans' capacity for belief reasoning has been brought into sharp focus by recent research. Children fail critical tests of belief reasoning before 3 to 4 years of age (H. Wellman, D. Cross, & J. Watson, 2001; H. Wimmer & J. Perner, 1983), yet infants apparently pass false-belief tasks at 13 or 15 months (K. H. Onishi & R. Baillargeon, 2005; L. Surian, S. Caldi, & D. Sperber, 2007). Nonhuman animals also fail critical tests of belief reasoning

but can show very complex social behavior (e.g., J. Call & A Tomasello, 2005). Fluent social interaction in adult humans implies efficient processing of beliefs, yet direct tests suggest that belief reasoning is cognitively demanding, even for adults (e.g., I. A. Apperly, D. Samson, & G. W. Humphreys, 2009). The authors interpret these findings by drawing an analogy with the domain of number cognition, where similarly contrasting results have been observed. They propose that the success of infants and nonhuman animals on some belief reasoning tasks may be best explained by a cognitively efficient but inflexible capacity for tracking belief-like states. In humans, this capacity persists in parallel with a later-developing, more flexible but more cognitively demanding theory-of-mind abilities.

Privatised Keynesianism: An Unacknowledged Policy Regime

Author(s): Crouch, C (Crouch, Colin)

Source: BRITISH JOURNAL OF POLITICS & INTERNATIONAL RELATIONS Volume: 11 Issue: 3 Pages:

382-399 DOI: 10.1111/j.1467-856X.2009.00377.x Published: AUG 2009

Times Cited: 38 (from Web of Science)

Conference: Workshop on Political Econmy of the Sub-prime Crisis in Britain Location: Univ

Warwick, Coventry, ELECTR NETWORK Date: SEP 18-19, 2008

Abstract: There have now been two successive policy regimes since the Second World War that have temporarily succeeded in reconciling the uncertainties and instabilities of a capitalist economy with democracy's need for stability for people's lives and capitalism's own need for confident mass consumers. The first of these was the system of public demand management generally known as Keynesianism. The second was not, as has often been thought, a neo-liberal turn to pure markets, but a system of markets alongside extensive housing and other debt among low- and medium-income people linked to unregulated derivatives markets. it was a form of privatised Keynesianism. This combination reconciled capitalism's problem, but in a way that eventually proved unsustainable. After its collapse there is debate over what will succeed it. Most likely is an attempt to re-create it on a basis of corporate social responsibility

Light drinking in pregnancy, a risk for behavioural problems and cognitive deficits at 3 years of age?

Author(s): Kelly, Y (Kelly, Yvonne)^[1]; Sacker, A (Sacker, Amanda)^[2]; Gray, R (Gray, Ron)^[3]; Kelly, J (Kelly, John)^[1]; Wolke, D (Wolke, Dieter)^[4,5]; Quigley, MA (Quigley, Maria A.)^[3]

Source: INTERNATIONAL JOURNAL OF EPIDEMIOLOGY Volume: 38 Issue: 1 Pages: 129-140 DOI: 10.1093/ije/dyn230 Published: FEB 2009

Times Cited: 47 (from Web of Science)

Abstract: Background The objective of this study was to determine whether there was an association between mothers' light drinking during pregnancy and risk of behavioural problems, and cognitive deficits in their children at age 3 years.

Methods Data from the first two sweeps of the nationally representative prospective UK Millennium Cohort study were used. Drinking patterns during pregnancy and behavioural and cognitive outcomes were assessed during interviews and home visits. Behavioural problems were indicated by scores falling above defined clinically relevant cut-offs on the parent-report version of the Strengths and Difficulties Questionnaire (SDQ). Cognitive ability was assessed using the naming vocabulary subscale from the British Ability Scale (BAS) and the Bracken School Readiness Assessment (BSRA).

Results There was a J-shaped relationship between mothers drinking during pregnancy and the

likelihood of high scores (above the cut-off) on the total difficulties scale of the SDQ and the conduct problems, hyperactivity and emotional symptom SDQ subscales. Children born to light drinkers were less likely to score above the cut-offs compared with children of abstinent mothers. Children born to heavy drinkers were more likely to score above the cut-offs compared with children of abstinent mothers. Boys born to mothers who had up to 1-2 drinks per week or per occasion were less likely to have conduct problems (OR 0.59, 95% CI 0.45-0.77) and hyperactivity (OR 0.71, 95% CI 0.54-0.94). These effects remained in fully adjusted models. Girls were less likely to have emotional symptoms (OR 0.72, 95% CI 0.51-1.01) and peer problems (OR 0.68, 95% CI 0.52-0.92) compared with those born to abstainers. These effects were attenuated in fully adjusted models. Boys born to light drinkers had higher cognitive ability test scores [standard deviations, (95% CI)] BAS 0.15 (0.08-0.23) BSRA 0.24 (0.16-0.32) compared with boys born to abstainers. The difference for BAS was attenuated on adjustment for socio-economic factors, whilst the difference for BSRA remained statistically significant.

Conclusions Children born to mothers who drank up to 1-2 drinks per week or per occasion during pregnancy were not at increased risk of clinically relevant behavioural difficulties or cognitive deficits compared with children of abstinent mothers. Heavy drinking during pregnancy appears to be associated with behavioural problems and cognitive deficits in offspring at age 3 years whereas light drinking does not.

The regional nature of Japanese multinational business

Author(s): Collinson, S (Collinson, Simon)[1]; Rugman, AM (Rugman, Alan M.)[3]

DOI: 10.1057/palgrave.jibs.8400347 Published: MAR 2008

Times Cited: 33 (from Web of Science)

Abstract: In the world's largest 500 firms, there are 64 Japanese multinational enterprises (MNEs) with data on regional sales, but only three operate globally; whereas 57 of them average over 80% of their sales and foreign assets in their home region. Why is there such a strong intra-regional dimension to their activities? Using empirical data and a new framework for analysing both downstream (sales) assets and upstream (production) assets we analyse why most large Japanese firms appear to have firm-specific advantages (FSAs) that are based in their home region. A structural contingency approach is applied to two case studies to explain how home-region-bound FSAs constrained the ability of Japanese MNEs to implement internationalisation strategies.