



## “Not right in the head”: How should teachers assess new talk about teenagers?

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### ABSTRACT

*Recently in New Zealand the Prime Minister's Chief Science Advisor has warned of changing circumstances creating a “powder keg” during adolescence, another top government advisor is reported as claiming young people's behaviour problems are the country's “biggest social issue”, and the catchphrase of a parenting series on national television has been that teenagers are best understood as “not right in the head”. Perhaps it is unsurprising that surveys have been reporting high levels of teacher stress and increasing levels of abuse and assault. Should secondary teaching therefore be considered a dubious career choice and a mass exodus from the profession anticipated? With regard to the implications for those whose lives continue to meet and mix in schools, this paper critically examines some of the local and overseas “expert talk” inspired by key features of scientific assertions regarding the changing nature of physical and cognitive development in adolescence.*

### Keywords

Adolescent discourse, puberty, secondary schools, teacher stress, teen brain.

### Introduction

Reports of teacher stress have appeared in the Anglophone research literature since the early days of public secondary education (Coates & Thoreson, 1976), but causal factors of student misbehaviour and underachievement, and expanding workloads linked to educational reforms, feature with increasing prominence (e.g., Geving, 2007; Lewis, Romi, Qui, & Katz, 2005). Indeed, it has been energetically argued that opportunities for positive experiences have been systematically undermined by *research-driven policies* prioritising control of student negativity over development of positive relationships (e.g., Hargreaves, 2000; Smyth, 2007) and standardised assessment of “teacher effectiveness” (e.g., Bullough & Pinnegar, 2009; Larsen, 2010; Loudon, 2008). New Zealand research suggests striving to maintain high commitment in the face of



such difficulties itself constitutes a significant feature of teachers' subjective reports of stress (Ingvarson et al., 2005), a situation recently critiqued in this journal:

While university ethics committees encourage researchers to find ways to “do no harm” to research participants while they are undertaking research, the same scrutiny is rarely given to the harm research can do once it is published and able to have an influence on policy and practice. (Thrupp, 2010, p. 120)

A recent report from the Prime Minister's Science Advisory Committee reinforces the view New Zealand adolescents have a high rate of social morbidity relative to those in other developed countries (Gluckman, 2011, p. 1). Subsequent to a report from the government's Advisory Group on Conduct Problems (2009), group member John Langley was recently reported as claiming significant behaviour problems among children and young people in the compulsory school system constitute the “single biggest social problem” the nation faces (Leask, 2011). While these reports see early intervention as key to preventing problems in “at risk” families and communities, issues are also framed in terms of more generic changes to the nature of adolescence. New scientific understandings of the adolescent brain are a central feature of this reconceptualisation, and (following Thrupp) I wish to argue in this paper that the implications of these understandings should also receive critical scrutiny.

### **The nature of adolescence: Shifting scientific stories**

From “raging hormones” to the “teen brain”: The re-storying of adolescent incompetence

The work of Granville Stanley Hall, first president of the American Psychological Association, is regarded as giving *scientific* credence to the belief adolescence is “a dangerously irrational state of human growth requiring controls inculcated through schooling” (Gatto, 2008, p. 45). Despite nonclinical studies subsequently suggesting a relatively untroubled state was normative, many researchers' preference for viewing adolescence as “universal” and “ahistorical” permitted Hall's influential “storm and stress” metaphor to survive the twentieth century and uphold an influential message for educators:

Because teenagers are biologically (and thus inevitably) unstable, adult control is a logical and necessary response. This characterization has important consequences for school practices and curriculum; adolescents are considered under the control of hormones and unavailable for serious (i.e. critical) school tasks and responsibilities. (Lesko, 1996, p. 157)

However, neuroscience was about to make an even more powerful narrative available. In the late 1990s pioneering work by Jay Giedd of the US National Institute of Mental Health and others using non-invasive neuroimaging procedures, especially structural magnetic resonance imaging (MRI), revealed maturation of the prefrontal cortex (PFC) was completed much later than previously thought—normally not until at least the mid-20s (a good source of early information is [www.pbs.org/wgbh/pages/frontline/shows/teenbrain](http://www.pbs.org/wgbh/pages/frontline/shows/teenbrain)). Subsequent occasional cautions from researchers notwithstanding (e.g., Johnson, Blum, & Giedd, 2009), a good deal of writing and commentary (including some by neuroscientists themselves) managed to

inculcate the view adolescents are best assumed to lack virtually all the reasoning, strategic planning and impulse control skills characteristic of “fully mature adults”. As explained for the public in one very widely syndicated internet article, for example: “The next time you’re ready to bellow, ‘WHAT in the world were you thinking when you did that?’, remember this intriguing fact: teens are NOT thinking the way adults think because they absolutely, positively can’t do that yet” (Cooke, n.d., para. 3). In New Zealand psychologist Nigel Latta, promoting his new parenting guide, told *NZ Herald* readers: “The first thing to realise is that teenagers have outgrown their brains” (du Chateau, 2008, para. 3)—or as his book clarified:

Many parents of teenagers are of the opinion that ... the average teenage brain has the functional ability of a walnut. This is, of course, not true. A walnut devotes its whole self to being a fully functioning walnut. Teenagers on the other hand do not possess a fully functioning brain. (Latta, 2008, p. 41)

Manifesting itself differently in sons and daughters, he explained, the deficit has boys “mimicking our extinct Neanderthal cousins”, losing the gift of speech and “resorting to rudimentary grunts” (p. 74), while the “Girl-niverse” is governed by a “bitchy physics” as mysterious as the physics of black holes, such that no one—not even teenage girls themselves—can understand them (p. 90). (These portrayals remain unchanged in the book’s 2011 edition.) Articulated rather more formally by the Prime Minister’s Chief Science Advisor, Peter Gluckman (2010)—“The immature human brain does not exhibit the level of understanding, abstract thinking, or higher executive functions that make impulse control, wisdom, and judgement possible” (p. 1)—the expectable shortcomings appear no less profound.

When the final major period of synaptic growth and pruning was believed to occur in early childhood, Jean Piaget’s timeframe for potential achievement of cognitive maturity (“Formal Operations”) in the mid/late teens was widely accepted. New evidence of a further period in late childhood/early adolescence triggered serious rethinking. Apparently, previous assumptions had been grossly overoptimistic regarding teenagers’ ability even to handle “concrete” tasks, as leading neuroscientist Deborah Yurgelun-Todd explained:

One of the things I think that this research could help inform us about is the fact that the teenager is not going to take the information that is in the outside world, and organize it and understand it the same way we do ... it means that ... whatever conversation you have with them, if you’re assuming they understood everything you said—they may not have.... A good example of that is the typical Saturday morning conversation where there is a number of small things that a child or adolescent would be told to do. “Put your dish in the sink. Please get dressed now. We’re going to get ready to go out.” And ten minutes later, there seems to be no movement, the dish is not in the sink and they’re not dressed. And the first response as an adult is that they’re being difficult or confrontational or not wanting to do it. But in fact.... It’s just that they saw it in a different light. (“Interview: Yurgelun-Todd,” 2002, pp. 5-6)

Of more recent renderings, “Imagine, then, how ‘make your bed and bring the laundry down’ might befuddle a 13-year-old” was how *LiveScience* reporters (2005,

para. 4) translated for the public the results of an abstract working-memory study, while epidemiologist Linda Chamberlain informs health/education professionals: “Asking a teenager to multi-task (i.e. ‘Clean your room, take the garbage out, and put your bicycle away’) can overwhelm an adolescent brain that is just learning how to sort and prioritize” (Chamberlain, 2008, para. 6). When facing emotional decisions adolescent brains are “simply not yet equipped to think through things in the same way” (Talukder, 2000, para. 5), and “A reward centre on overdrive coupled with planning regions not yet fully functional could make an adolescent an entirely different creature to an adult when it comes to seeking pleasure” (Powell, 2006, p. 867).

Such ideas proved useful to many. For example, the American Bar Association’s (2004) campaign for less punitive juvenile justice claimed Giedd’s work showed adolescents have “significant neurological deficiencies that result in stark limitations of judgment” (p. 3), while the International Justice Project (n.d.) even more extravagantly asserted they “look only to the immediate future, with a time horizon of 1–3 days. The lack of capacity to plan ahead exemplifies the problems in treating the culpability of adolescents in the same way as that of a fully mature adult” (para. 18). Alternatively, findings were employed in the context of debate around the need for more *restrictive* “legal ages”, as in these Australian examples:

It is clear from the research that a unique characteristic of adolescent boys is an inability to predict the consequences of their actions.... So part of the reason for what happened on Sunday night is that the driver was a teenage boy and his brain was simply not capable of making a sensible judgment. (Carr-Gregg, 2007)

Ever wondered why teenagers binge drink, drive too fast and engage in indiscriminate sexual activity? A new television series lifts the lid on the teenage brain, explaining their irrational behaviour. *Whatever! The Science of Teens* reveals that teens don’t mean to behave badly—they are biologically compelled to.... Host Steve Cannane said ... “You constantly hear parents saying to their teens, ‘What were you thinking?’ but the truth is, they’re not thinking at all.” (Browne, 2009, paras. 1–4)

Research may also help adults better understand teenagers’ mental health issues, as this (UK) *Guardian* news report suggested:

Scientists have found that the mechanism normally used by the brain to calm itself down in stressful situation seems to work the opposite way in teenagers, making them even more anxious. [Researcher Sheryl Smith explained] “It could be an emotional reaction and it might be fluctuating too because it’s an amplified reaction to the stress ... This is a reaction that seems like an over-reaction to the adult, perhaps. But to the teenager, it is absolutely the only thing they are able to do. (Jha, 2007, paras. 2, 6)

Going further, several bestselling US parenting guides promoted interpretations likening adolescence to insanity. For example, a widely quoted passage from journalist Barbara Strauch’s *The Primal Teen* (2003) states: “The teenage brain may, in fact, be briefly insane. But, scientists say, it is crazy by design” (p. 8). Psychologist Michael Bradley’s *Yes, Your Teen Is Crazy!* explained:

Adolescents are temporarily brain-damaged... This data will help you avoid personalizing your kid's insane behaviors by proving to you that he's not a bad person, he's just brain-challenged ... [and] show you how that misfiring brain interacts with the dangerous world we've built around your temporarily disabled child. (Bradley, 2001, pp. xvii–xviii)

Bradley is also one of many identifying supposedly meaningful similarities between the consequences of brain restructuring in early childhood and adolescence:

Both that toddler and adolescent brain at times are unstable, dysfunctional, and completely unpredictable. They both have just developed a bunch of brain circuits that may fire off unexpectedly. Also, they both have neurologically deficient controls to moderate these impulses and to understand the likely outcomes of their actions. In the science of mental health, we have a word for that. We call it crazy. (p. 8)

Therefore, Bradley insists, “Don’t talk to crazy people like they make sense. ... your child doesn’t qualify as sane for now, and that’s not a happy way to be ... adolescence, at times, is a kind of mental illness (p. 15). For New Zealand parents, Latta (2008) confirmed, “People say that adolescence is a developmental stage ... It’s actually more like a mental illness” (pp. 37–38). Therefore, by far the most common error parents of teenagers make “is that they think they are dealing with a normal person” (p. 120).

#### Teen brain advice for teachers

If pre-service or refresher courses on adolescent development for secondary teachers consisted primarily of the information presented thus far, participants could be forgiven for wondering whether it was really worth attempting to teach much more than simple strategies of safety and self-control to this age group. Yet (well-known dissenters like Ivan Illich or John Taylor Gatto notwithstanding) success in formal education during the teen years is today constructed as ever more vital to adult success. So do messages aimed specifically at teachers offer anything different?

Some influential scholars’ work advocates cautious interpretation of a fledgling science (e.g., Blakemore & Frith, 2005; Kagan & Herschkowitz, 2005), and a recent Australian textbook devoted only two and a half of 300+ pages to the teen brain, saying although research has “taken the field of adolescent development by storm”, there are still “no clear take-home ideas for the teacher” (Bahr, 2007, p. 125). Others see Giedd’s so-called “use-it-or-lose-it” hypothesis (“Interview: Jay Giedd”, 2002) as confirming a pivotal role for teachers. US psychologist Sheryl Feinstein (2009), for example—despite the familiar preamble “They can’t act like adults because they don’t think like adults” (p. 4)—stresses the importance of commitment to students’ learning: “The neural connections a teenager makes endure a lifetime, and unused connections are lost forever. If they aren’t reading, doing science, or solving problems, the synapses for those activities will be pruned” (p. 11). (I examine this particular argument elsewhere: Payne, 2010.) Feinstein’s Australian counterpart, Andrew Fuller, has more colourfully advised:

If you want adolescents to learn make it emotionally relevant to them. Use their TV shows—*Friends*, *Home and Away*, *Dorks on Heat*—to spark their interest. The major interest and activity in the adolescent

brain is all about the “two F’s”—do I fight it or do I, ... er, ... become extremely friendly with it. (Fuller, 2003, p. 8)

Dangers of overestimating both cognitive and emotional maturity are frequently identified, as neuroscientist Charles Nelson explained:

If I walk into a class of kids who are 14 or 15, those kids have a level of brain maturity that just does not map onto the kinds of emotional decision-making that a lot of those kids are being asked to make by teachers and parents. The more [they] ... understand that there is a biological limitation to the child’s ability to control and regulate emotion, [the more] they might be able to back off a little and be a bit more understanding. (McKenzie, 2003, paras. 13, 16–17)

Likewise American teacher educator Pat Wolfe notes in a recent paper on her website that when teens engage in irrational behaviour, teachers’ “oft-asked question ... What were you thinking?” is difficult for teens to answer because in many cases they weren’t thinking reflectively; they were reacting impulsively. ... Giedd comments that adolescents can be thought of as trucks with no brakes!” (Wolfe, 2009, para. 7). Educational consultant Victoria Tennant alerts teachers that when teens are particularly stressed, “defensive behaviors take charge and the thinking brain shuts down” (Tennant, 2007, para. 4), and drawing particularly on Yurgelun-Todd’s work, which has been widely understood to demonstrate that adolescents are very poor at reading other people’s emotions, Alistair Smith argues a major implication of research is that schools need to pay as much attention to teaching “social behaviors” as to reading, mathematics or science (Smith, 2004, p. 72).

## Discussion

In their “State of the art” series article on adolescence for the British Psychological Society in 1998, well-known UK researchers John Coleman and Debi Roker not only made no mention of the teen brain, but also viewed research as entering a new phase marked by “a growing emphasis on the positive aspects of behaviour, and a focus on adaptive mechanisms” (p. 595). Such optimism now seems largely misplaced. Combined reports of immature brains and a continuing decline in age of puberty onset are instead producing claims of an unprecedented “mismatch” between timelines for achievement of physical/sexual and cognitive/emotional maturity (Gluckman & Hanson, 2006; Herman-Giddens, 2007). Indeed the New Zealand government is warned to urgently develop policies to deal with the tripartite dangers of earlier sexual maturation, slow brain development and an “increasingly complex social milieu”, which together “have the potential to produce a powder keg during adolescence” (Gluckman, 2010, p. 2) and which will function as the major driver of adolescent morbidity (Gluckman, 2011). Concurrently, it seems likely that existing expectations for teachers to be familiar with developments in brain research will only intensify as neuroscientific knowledge guides expert advice in more and more areas of people’s lives (Choudhury, Nagel, & Slaby, 2009). Yet if most of the expert and lay interpretations of teen brain science cited above are accepted, they surely predict increasing pedagogical and managerial tensions in secondary classrooms. On the other hand, teen brain discourse is not yet ubiquitous: *The Whānau Pack* (Karaitiana & Wells, 2008), for example, commendably illustrates how to provide contemporary advice on

nurturing good adult–adolescent relationships with no reference to immature PFCs at all. Therefore, without inappropriately disrespecting researchers’ and experts’ intentions, it seems important to take a closer look at what is going on and identify some reservations teachers should probably be considering.

First, it is worth noting a significant amount of current information derives from research with nonhuman animals—considered appropriate because adolescence is a developmental phase identified across mammalian species (Spear, 2007). But is this really acceptable? In the *Guardian* article cited above (Jha, 2007), Sheryl Smith, while described as “previously working” with teenagers, was actually talking about a new study involving stress in *pubertal female mice* (Shen et al., 2007). Should we agree this effortlessly translates into an understanding that human teens’ emotional over-reactions to stress are “absolutely the only thing they are able to do”? Second, there is the problem of flawed methodology and/or the limited connectedness to “real-life” social contexts of much research to date even when conducted with human participants. There is little space to discuss this issue here (for useful critiques see Bessant, 2008; Epstein, 2007; Males, 2009; Sercombe, 2010; Vul, Harris, Winkielman, & Pashler, 2009), but it is a significant matter often hidden by writing that accords extremely speculative findings the status of established fact (a characteristic of many of the above examples).

Third, however obvious it may seem today to associate a particular set of behavioural descriptors to structural/functional aspects of adolescent (vis-à-vis adult) brains, history advises caution. Records show that prior, and even subsequent to, publication of Hall’s 1904 treatise on adolescence, it was the *female* brain scientists found most difficult to fathom and saw as their “duty” to understand (Walker, 1997). For example, writing in 1879 French psychologist Gustave Le Bon noted women “excel in fickleness, inconstancy, absence of thought and logic, and incapacity to reason”; the inferiority of women’s vis-à-vis men’s brains should be understood as “so obvious that no one can contest it for a moment; only its degree is worth discussion” (Gould, 1981, p. 104). Thirty years later psychiatrist Alfred Schofield concluded a woman’s mind still “remains the greatest mystery of the race” (Walker, 1997, p. 31).

Eight decades on, however, and it is *adolescents* that “neuroscientists, developmental psychologists, clinical investigators, and social scientists must work together to understand” (Dahl, 2004, p. 5). The histories of these two scientific endeavours demonstrate singular resemblances—not least of which is that, like women before them, adolescents themselves are conspicuously absent from Dahl’s list as people having anything to contribute. Not entirely surprising, of course, if research does indeed prove them unable to plan ahead more than a few days or think like adults—or sometimes, apparently, incapable of thinking at all due to a brain that is shut down, damaged, or indistinguishable from a kindergartener’s (though even most preschoolers could probably manage a request to “make your bed and bring the laundry down”). Why try collaborating with those whose world is focused solely on aggression and sex, and who behave badly because they are biologically compelled to do so?

It should be acknowledged that books, articles and interviews in which such “findings” are reported also typically include exhortations to celebrate and enjoy, with “insane” teens described somewhere as creative, brilliant. But overall and *collectively*, these accounts spell out a message of unmistakable disrespect—what sociologist Mike Males (2010) calls “mass denigration” (p. 97) of a kind that would be branded hate speech if applied to adult groups. Consider that the New Zealand police recently

immediately apologised for issuing a statement calling a missing woman “half-caste” (Koubaridis, 2011), yet TVNZ and Nigel Latta reportedly insist viewers “understand” no offence is intended by Latta’s *Politically Incorrect Guide to Teenagers* series that repeatedly refers to an entire age cohort as “mental” and “not right in the head” (Gillies, 2011). Would teachers be happily understood by students as “humorous” and “inoffensive” if they used such language? How is the situation improved by experts encouraging their parents to think in these terms?

Fourth—as Thrupp (2010) argued—research must be considered in terms of the wider cultural and political context, and it is increasingly recognised that neuroscience, in terms of its findings and practical applications, should be viewed as a “cultural activity” (Choudhury et al., 2009, p. 63). In his recent analysis of the US debate on sex education in schools, Males observed: “After absorbing what seems like several tons of literature on ‘teen sex’ and ‘teen pregnancy’ ... the basic consensus I perceive is this: *adults love to call teenagers stupid.*” (2010, p. 202). Teen-brain dysfunction is also good business because big agendas of all political persuasions can be “effortlessly advanced by invoking the ‘cognitive limitations of the adolescent brain’” (pp. 205–206). Furthermore, he argues, highlighting this “veneer of bioscience” draws attention away from the impact of economic disadvantage, bad schools, and the inadequacies of *adults’* performance on adolescent behaviour and achievement.

Therefore we should critically engage with teen brain science not merely in terms of what specific pedagogical practices it may or may not support, but in terms of the overall positioning of adolescents in contemporary society it helps to sustain. Compare for example how these leading academics wrote about Australian adolescents immediately prior and subsequent to emergence of the teen brain story: sociologists Judith Bessant, Howard Sercombe and Rob Watts determined to lay “storm and stress” to rest, and psychologist Michael Carr-Gregg, just six years later, helping to revive it:

One assumption we operated with is that young people are normal. The conventional wisdom that to be adolescent is to be in constant turmoil is not well supported by the evidence. On the contrary, young people generally are able to maintain important relationships, work effectively, and deal with challenges in their lives quite competently. ... if we are serious about working effectively with, being close to, loving, empowering and supporting young people, we need firstly to re-examine the way we have come to see and think about young people. (Bessant, Sercombe, & Watts, 1998, p. vii)

When Dad speaks to William, Dad should remember that William’s brain is a work in progress—it will only be fully formed at the age of 23. ... Adolescence is now an extended period of vulnerability, starting much earlier and finishing much later than ever before. ... The developmental stages have somehow gotten out of synch. ... Many [adolescents] are psychologically underdone. They do not have the capacity to face, overcome or be strengthened by adversity—an important characteristic of previous generations of young Australians. (Carr-Gregg, 2004, paras. 10, 16)



## Conclusion

In May 2010 the *Sunday Star Times* presented Peter Maslin, a 55-year-old high school teacher contemplating early retirement, as “a symbol of a mass teacher exodus that unions say will leave a huge void within a decade” in the secondary teaching profession in New Zealand. Why is mass exodus thought likely? Maslin is quoted as saying, “Many of my friends respond to this question with statements like ‘only a nutter would take on the youth of today’” (Sutton, 2010, p. A2).

Teachers may leave or stay in the profession for a variety of reasons. If students’ (mis)behaviour and (under)achievement are increasingly salient determinants of teacher stress, as some research suggests, is the new “science” of adolescence part of the solution or the problem? Although teachers today may need to become “neuroeducators” (Gardner, 2008), this does not mean accepting new ideas regardless: teachers have, after all, previously been sold “opportunistic” notions (e.g., “left brain/right brain”, “kinaesthetic learning styles”) subsequently proving of little instructional worth (Goswami, 2006; Howard-Jones, 2010). The latest authoritative New Zealand statement does raise the “intriguing” question of whether brain maturation had always taken this long (but it hadn’t mattered so much), or if the context of modern society has generated a delay that did not exist before (Gluckman, 2011, p. 6). But whatever the answer, we may be better advised to work with the assumption that “almost any neuroscientific finding that has a bearing on human behavior is as likely to be revised by future research as it is to be confirmed” (Choudhury, Gold, & Kirmayer, 2010, p. 18).

According to prominence in this discussion to the socially constructed nature of teen brain discourse does not endorse dismissal of the important influence of biological factors in shaping adolescents’ accomplishments and vulnerabilities (Sercombe, 2010). Rather, its goal has been to advocate for vigilant attention to the power and operation of authoritative voices in configuring societal stereotypes of young people, and the “social scripts” they make less or more available to adolescents and adults whose lives continue to meet and mix in schools.

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