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Fertile bodies, immature brains?: A genealogical critique of neuroscientific claims regarding the adolescent brain and of the global fight against adolescent motherhood

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ABSTRACT

This article presents a critique of neuroscientific claims regarding the adolescent brain and the suggestion that adolescent motherhood disrupts the healthy development of the mother and her child. It does so by presenting a genealogical investigation of the conceptualisation of 'adolescence' in Western psychology and the emergence of the problematization of 'adolescent motherhood'. This examination reveals that antecedents to neuroscientific claims regarding adolescent immaturity, impulsivity and instability were articulated by psychologists throughout the first half of the 20th century. However, up until the 1960s there was no problematization of 'adolescent motherhood' per se and adolescent mothers were only discussed as part of the concern with 'unwed mothers'. Exploring the continuities and shifts in assertions regarding adolescence, this article highlights the complex history of some of the notions currently found in neuroscience. In doing so it aims to contribute to a growing body of critical literature questioning the universality of neuroscientific findings.

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1. Adolescent motherhood: a global developmental hazard?

In the contemporary policy world there seems to be little doubt regarding the need to prevent adolescent motherhood. The effort to prevent teenage girls from becoming pregnant and proceeding to raise their children is the hallmark of public health and social policies across a wide range of Western nations (Arai, 2003; Daguerre and Nativel, 2006; Hoggart, 2012; Luker, 1996, 94). This concerted policy effort now has a global reach (Gonçalves et al., 2010; Mkhwanazi, 2010; WHO, 2011). At least in part, this is fuelled by Western global health and development stakeholders such as the WHO and the Bill and Melinda Gates foundation (Koffman and Gill, 2013). The WHO and UNICEF formed an Interagency Taskforce on Adolescent Girls whose objective is to help adolescent girls delay marriage and childbearing (UN Interagency Taskforce on Adolescent Girls, n.d.). Furthermore, adolescent fertility has been incorporated as an indicator of progress against the Millennium Development Goals. A decrease in the rate of adolescent births is now an indicator of progress on MDG 5, the goal of Improving Maternal Health (United Nations, 2013).

Developmental expertise plays a key role in the problematization of adolescent motherhood. Adolescent motherhood is conceptualised as a disruption of the healthy developmental schedule, a disruption that poses risks to the health of the young mother and her child. A United Nations Population Fund report succinctly summarises this viewpoint: 'Adolescent girls become brides, get pregnant and have children before they are physically, emotionally, and socially mature enough to be mothers' (Rowbottom, 2007, 1). Adolescent girls, it is suggested, are not yet emotionally mature enough to 'mother' their children. The early years of a child's life and the quality of 'mothering' received are seen as having a significant impact on the child's future health. Therefore adolescents' emotional immaturity is a risk not only to their own development but to that of their child too (Wilson and Huntington, 2006). As well as psychological immaturity, the global health literature also refers to gynaecological and obstetric research suggesting that childbearing in early adolescence poses additional medical risks and correlates with poorer health outcomes (Rowbottom, 2007; Save the Children, 2004).

While the view that adolescent motherhood is problematic is not novel, contemporary neuroscientific research gives it enhanced scientific credence. The last decade has seen extensive research into the adolescent brain. Using primarily functional or structural MRI researchers explored the changes that occur in the brain during the

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second and third decades of life. Cortical development is now believed to be a protracted process that continues well into the third decade of life. This finding broke with earlier assumptions regarding brain maturation, previously believed to be achieved closer to puberty (Johnson et al 2009). Significantly, it is believed that the frontal lobes, involved in executive functions such as planning and response inhibition are among the last to undergo these structural changes and are not fully mature until halfway through the third decade of life. One of the main claims put forward by several neuroscientists is that there is a discrepancy between the timing of the development of subcortical limbic systems and top-down control systems (Casey et al., 2011). According to this view, there is a period of time when the systems involved in responsiveness to incentives are fully effective, while those responsible for impulse control have not yet reached their full ability (Blakemore and Choudhury, 2006; Casey et al., 2008; Yurgelun-Todd, 2007). The temporal gap between the two systems is what makes the adolescent period, particularly mid-adolescence, a period of 'heightened emotionality' one in which there is a propensity to engage in risk taking behaviour (Steinberg, 2007). Psychologist Laurence Steinberg even went so far as to argue that "[h]eighted risk-taking during adolescence is likely to be normative, biologically driven, and, to some extent, inevitable" (Steinberg, 2007, 57).

Neuroscientific 'truth claims' (Rose, 2012) are already circulating in the public sphere. For example the American Academy of Child and Adolescent Psychiatry published a briefing note for parents reiterating the claims that adolescent impulsivity and risk taking are the result of the characteristics of the adolescent brain (American Academy of Child and Adolescent Psychiatry, 2011). A recent WHO report pertaining to adolescents across the world made similar suggestions (WHO, 2011). Neuroscientific findings are also being used in policy and legal debates, frequently leading to demands for greater protection for young people as, for example, in the submission to the US Supreme Court in the decision regarding whether the death penalty can be imposed for minors (Walsh, 2011). While leading to greater protection, these findings are also being used to argue for a greater restriction of adolescents' autonomy, for example in relation to their ability to make autonomous decisions regarding sexual activity, contraceptive use and abortion (Aronson 2007). Since policy responses to criminality and sexuality are gendered classed and 'raced', this is likely to have a different impact on young people depending on their background (Ogle and Batton, 2009; Rembis, 2011).

The claim that the brain only fully matures when a person is well into the third decade of her life suggests that there is a temporal gap between reproductive and neurological maturation. Furthermore, the claims regarding the characteristics of the adolescent brain suggest that teenage parenthood is a potentially catastrophic scenario. How can a person prone to engagement in risk taking behaviour be responsible for a vulnerable baby? Given their more limited ability to control impulses, how can adolescents offer adequate parenting? These questions become even more pronounced if we take on board neuroscientific assertions regarding the crucial processes taking place during the first few years of a child's life (Allen and Duncan Smith, 2009; Macvarish et al., 2014; O'Connor and Joffe, 2013; Rose and Abi-Rached, 2013; Walsh, 2011; Wastell and White, 2012). Since the first few years are understood as a crucial time in brain development, the damage caused by adolescent parenting is therefore seen as significant both for the individual and for society at large.

As Choudhury observed, while drawing on innovative scientific tools, neuroscientific findings are remarkably aligned with long-standing psychological understandings of adolescence dating back to the beginning of the 20th century (Choudhury, 2010). Taking this similarity as the starting point, this paper presents a

genealogical exploration of some of the assertions currently made by neuroscientists with the aim of critiquing them and questioning their universality. Two key suppositions which this article considers are: the suggestion that there is a temporal gap between reproductive maturation and mental (cognitive and emotional) maturation; and the assertion that adolescents are prone to impulsivity and risk taking behaviour. Following Choudhury's observation, I examine the conceptualisation of adolescence within Western psychology, highlighting the strong semblance between key notions prominent in the early twentieth century and contemporary neuroscientific claims. I do not claim that the psychological suppositions are identical to neuroscientific findings. The 'psy' claims discussed were based on different methods and rooted in different epistemic cultures to contemporary neuroscience (Cetina, 1999; Rose, 1999; Rose and Abi-Rached, 2014, 2013). In order to conceptualise the relationship between these groups of truth claims I draw on Foucault's concept of 'descent' as denoting a notion of continuity in which one does not seek to identify a core which persists throughout the different manifestations. The attempt instead is to identify affinities and discontinuities which help situate contemporary neuroscience within an intellectual and historical context (Foucault, 1998b). By doing this, I seek to engage with the question raised by Rose and Abi-Rached: are we witnessing the replacement of a 'psychological complex' with a 'neurobiological complex'? This article hopes to highlight that even if such a shift is taking place, there are important continuities in suppositions regarding adolescence that need to be explored (Rose and Abi-Rached, 2014).

The article begins by outlining the conceptualisation of adolescence in some key writings by psychologists and psychoanalysts and proceeds to identify several key suppositions underpinning them. Recognising the international nature of professional debates, my account draws on social scientific literature published in the US and the UK as well as scholarly work on both these countries (Arney and Bergen, 1984; Kunzel, 1993; Luker, 1996; Lunbeck, 1987; Metzler, 2003; Solinger, 1992). The article then explores the absence of 'psy' discourse on 'adolescent motherhood' in post-war social scientific literature before proceeding to identify the shifts which mark the emergence of this category. By charting these social scientific discourses I aim to highlight the continuities and discontinuities in notions of adolescence and in categories of mental disorder. By bringing to the fore this complex history I hope to facilitate critical reflection on the truth claims put forward by neuroscientific research.

2. Adolescence: sexual bodies, immature and unstable minds

There is little questioning in historical and anthropological literature that modern Western adolescence is a historically and culturally specific phenomenon (Comaroff and Comaroff, 2006). Historians of childhood and youth in Europe have highlighted the changing nature of understandings and experiences of 'childhood', 'youth' and 'adolescence' (Aries, 1962; Gillis, 1974; Springhall, 1986). Although historians vary in their accounts, most situate the emergence of modern Western notions of adolescence in the 18th or 19th century (Gillis, 1974; Hendrick, 1990; Springhall, 1986) and link it to the processes of industrialisation, the expansion of education and restrictions on child labour. Psychological conceptualisations of adolescence emerged within the context of these shifts but have also played a key role in shaping legislation as well as educational and governmental practices (Davis, 1990; Rose, 1999).

In this section I identify several central assertions in the psychological conceptualisation of adolescence which can be found in writings published during the first half of the twentieth century.

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