Are networked teens particularly vulnerable online, due to the social, psychological and neurological changes they are experiencing during that period?
Over the past decade technological advance has deeply impacted upon modes of human communication. In their September 2016 article for The Psychologist, Ian Tucker and colleagues explored the creation of what they term a ‘surveillance society’, largely located within the information that people share through social networking. While this is clearly of concern to networked populations in general, psychological and neurological evidence suggests young people's personalities are more fledgling and fragile than those of mature adults. Might such interaction therefore be more damaging to children and young people than to mature adults?

In terms of its own lifespan development, the mass social networking phenomenon has not yet reached adolescence itself. The first iPhone was released in 2006, the same year as Facebook became generally available to anyone over 13. Due to such recency, there are as yet no definitive empirical findings to indicate whether social networking is harmful, only emerging findings (including from psychologists such as Mark Griffiths) that some users have reported symptoms of addiction.

In a 2014 book, *It’s Complicated: The Social Lives of Networked Teens*, Danah Boyd identifies four aspects of networked information that may be viewed as either benefits or drawbacks, depending upon the purposes of the user:

- Persistence – durability of content
- Visibility – breadth of potential audience
- Spreadability – the ease with which content is shared
- Searchability – the ability to locate content through sophisticated search engines.

All these features have the potential to create problems for the ongoing identity-formation processes of young people within the ‘glass box’ of a socially networked environment. US psychologist Sherry Turkle, in her 2011 book *Alone Together*, reflected upon the classic psychoanalytic identity theory of Erik Erikson, who emphatically proposed that adolescence should be a period in which young people should be free to experiment with their identities without enduring consequence. She raised grave concerns about the lack of such provision for the current generation of young people in post-industrial societies.

Writing for the website Philosophy for Change in 2012, Tim Rayner went beyond the Foucaultian concept of the prisoner surveillance ‘Panopticon’ in describing the surveillance experienced by young people: ‘…there are no guards and no prisoners in Facebook’s virtual Panopticon. We are both guards and prisoners, watching and implicitly judging one another.’ Sherry Turkle writes that many of her research participants were painfully aware of such visibility, but were willing to sacrifice privacy for the sake of connectivity. In a pilot study carried out with a small sample of participants aged between 12 and 18, I have found a similar attitude, embodied in the participant comment that teenagers are compelled to regularly log on to social networks due to ‘a fear of missing out on things if they don’t have it’.

Why would this be? Danah Boyd proposes that contemporary Western teenagers experience highly organised and restricted lives due to heightened parental concern relating to environmental danger, and the focus upon academic and sporting achievement in highly competitive neo-liberal cultures; consequently young people deeply invest in social media as their major venue for simply ‘hanging out’. I discussed the adult ‘colonisation’ of children’s lives in my co-authored 2014 article in the *International Journal of Play*, however, the suitability of the online environment as a forum for young people to engage in the intensive identity construction that takes place during adolescence has not yet been effectively explored by social scientists.

**Footprints**
Recent advances in biopsychology have offered some support to earlier psychoanalytic concepts of a fragile
The persistence of information committed to social networks also raises another issue for adolescents, which Turkle terms the ‘tethered’ identity. Where individuals from previous generations typically formed a number of ephemeral friendships during adolescence which waxed and waned as an inevitable consequence of growing up and moving on, social networking provides an environment in which if nothing is actively done to cut such ties (the Facebook action referred to as ‘unfriending’, which can have socially awkward implications), young people remain for ever tethered through social networks to people who are no longer part of their everyday lives, and with whom they may have little in common. Turkle’s participants described being unable to leave the person that they were in adolescence behind, with an ongoing sense of unease about embarrassing information that their teenage self may have left lurking in cyberspace. One commented: ‘I feel that my childhood has been stolen by the internet.’

Additionally, as Turkle points out, equipped with a networked mobile device, support and direction from parents and friends to whom young people are digitally tethered is constantly available; therefore teenagers no longer routinely find themselves in situations in which they have only the self to depend upon; for example getting lost on unfamiliar streets or dealing with a difficult interaction with a stranger.

The deluge of information that arrives through social networking on mobile devices is a formidable challenge for a species which evolved to pay concentrated attention (see Daniel Levitin’s 2015 blog on ‘how to better structure our time in the age of social media and constant distraction’). Again, this is of particular concern for those who are in the psychologically vulnerable stage of constructing the intricate neuronal architecture required to cope with adult social interaction, in which a relatively stable self-concept and considered prediction of potential responses from others is essential. In order to cope with a heavy volume of socially networked communication, we are led to reduce the depth and complexity of our messages. Michael Harris comments that this feature of social networking creates a paradox...
of ‘on tap’ streams of connectivity that are highly appealing to deeply entrenched human social instincts, alongside a consequent lack of time for deep connection. This point is clearly not lost on some teenagers. One of the participants in my pilot study commented as she reflected upon her day-to-day social networking activities: ‘When you say it out loud, when you have to explain it, it sounds like the most narcissistic thing.’

**What should we do?**

To thoroughly work through intricate identity-formation processes, teenagers need time and space for long, meaningful conversations with their peers and some amount of in-depth debate with parents and other emotionally bonded adults, interspersed with solitary reflection. It could be argued that instead they are immersed in a world that panders to more primal needs: writing in *The Psychologist* in September 2015, Ciarán Mc Mahon compared human responses to message notification sounds from networked devices to animal responses within operant conditioning contingencies. In *Psychology Today* in 2012 Eva Ritvo points out that the most powerful reinforcement for a highly social creature is a signal that others are seeking contact, raising levels of dopamine and oxytocin within the physical brain. As Danah Boyd poignantly comments, ‘most teens aren’t addicted to social media; if anything, they are addicted to one another’. Indeed, such effects may be heightened during adolescence, due to potentially enhanced effects of external stimuli during this life stage, and the compelling need for peer feedback.

While it is clearly prudent to warn young people about risky online behaviours, the nature of the adolescent stage of development means that they remain highly vulnerable to being drawn into incautious over-sharing; research from Blakemore and others suggests that during adolescence, the neuronal mechanisms that mediate social caution are muted in order to facilitate experiences that enhance social learning and, consequently, identity-construction processes.

The implication is that, over the past decade, young people have been recruited into a mass social experiment at a highly vulnerable stage of their development, which enticed them to commit a significant amount of highly personal information to a worldwide database, freezing their adolescent social experiments and errors within the most public forum imaginable. As Turkle notes: ‘While none of these conflicts about self presentation are new to adolescence…what is new is living them out in public, sharing every mistake and false step.’ This may have negative effects upon lifelong mental health, potentially creating an insidious anxiety from which, if no action is taken to permanently delete such data, they will never be free.

It is of course possible that future generations confronted with such a history may indeed be more cautious, possibly due to increased adult surveillance of their online activities. But if they continue to lack free time for ‘real-life’ association, might this mean that they will never be free to construct a deep multifaceted, human identity due to fears of exposure; restricted by circumstance to experiencing the self and others through shallow, sterile online profiles? From this perspective, it could be argued that the worst may be yet to come. Indeed, the recent launch of a Facebook ‘lifestage app’ marketed at young people was criticised by the BBC’s technology reporter Zoe Kleinman due to its lax privacy settings.

The question that now arises for psychologists is whether the social networking environment can be empirically demonstrated to be a particularly inappropriate environment for young people and, if so, how they might subsequently be better protected in this respect.

The instigation of such research is clearly supported by Article 36 of the United Nations Convention of the Rights of the Child, which states: ‘Children should be protected from any activity that…could harm their welfare and development.’ However, researchers would also need to be mindful of children and young people’s rights under Article 13 (freedom of expression), Article 15 (free association) and Article 17 (accessing information).

Personally, I am reminded of Peter Kelly’s comments back in 2001 that ‘youth is principally about becoming’. The view from this developmentally informed perspective indicates that, in the light of existing and potential technological development, it is time to call for an international discussion that explicitly considers the creation of suitable physical, temporal and online spaces purposely designed to nurture this process.