adolescent socio-emotional functioning
Teenagers Are Great!

Entrepreneur

Inventor

Baking genius

Nobel laureate
But Adolescence Can Be Tough

Teenage mental-health crisis: Rates of depression have soared in past 25 years

How has society managed to produce a generation of teenagers in which mental-health problems are so prevalent?

Geraldine Bedell | @geraldinebedell | Saturday 27 February 2016 | 64 comments

A&Es hit by children's mental health crisis

Woodford stabbing: Teenager knifed to death 'in row over tracksuit'

Family of victim Charles Kutyaуроро, 16 plead: stop the 'destruction' caused by knife crime

DAVID CHURCHILL, BEN MORGAN, JUSTIN DAVENPORT | Monday 11 January 2016
Are Teenagers Different?

- Adolescence is associated with 200% increased mortality
- ‘Health paradox’
- Also a key time for mental health problems

Half of all lifetime cases have their onset by age 14, and 3/4 by age 24
Could Brain Development Play a Role?

- Study of **synaptic density**: number of connections between neurons (brain cells)
- **Prefrontal cortex** took the longest to mature
MRI: Studying the Living Brain
Thinning of grey matter between ages 4 and 21

Gogtay et al. (2004)
These Data Stimulated Neuroscience Studies…

- Reduced ventrolateral prefrontal cortex response to social rejection in 19 adolescents aged 14-16 compared with 16 adult controls
- May reflect immaturity in brain regions underpinning emotion regulation

Sebastian et al. (2011)
But What About Behaviour?

• Adolescents with more intense emotions, mood swings and poor emotional control report more depression and problem behaviour.

• But more research needed on how emotion regulation develops in adolescence, and its relation to mental health

• This will help us to know what to target and when in order to foster resilience
What do we mean by ‘Emotion Regulation’?

“What the monitoring, evaluation and modifying of emotional reactions in order to accomplish goals” (Thompson, 1994)

Dual process framework distinguishes between:

**Explicit ER:** conscious strategies to downregulate emotional responses

**Example:** reappraisal (e.g. Gross, 1998) – changing one’s interpretation of an emotional event.

‘Why wasn’t I invited to the party? Maybe they don’t like me? Or, maybe they will invite me when I next see them’.

**Implicit ER:** automatic processes occurring largely outside conscious awareness

**Example:** Screening out grumpy faces as you walk down a busy street.
Implicit Emotion Regulation

- Emotional capture (Hodsoll et al. 2011)
- Pain interference (Lockwood et al. 2013)

Explicit Emotion Regulation

- Use of reappraisal strategies (based on Ochsner/McRae)

Questionnaires (self and teacher report)

- Demographics
- ER strategy use
- Aggression
- Anxiety
- Depression
- Behaviour
- Non verbal IQ

Sebastian et al. (in prep)
• Classroom-based online testing (Delosis Psytools)
• 100 adults also tested in small group settings
• Testing now complete
Demographics: Time 1

Gender split by school year/age

Year 10 (14-15)
Mean age: 15.38
- Male: 52%
- Female: 48%

Year 9 (13-14)
Mean age: 14.40
- Male: 49%
- Female: 51%

Year 8 (12-13)
Mean age: 13.25
- Male: 51%
- Female: 49%

Year 7 (11-12)
Mean age: 12.24
- Male: 55%
- Female: 45%

Overall participant mean age: 13.69

Ethnicity

- Asian: 38%
- White: 34%
- Black: 16%
- Other: 12%

Overall participant mean age: 13.69
Manipulation Check: ‘What did you think of to change how you were feeling?’
Emotional Reactivity

- Decrease in emotional reactivity with age in adolescence

- Reactivity also decreased from Time 1 to Time 2.
- More anxious adolescents showed greater reactivity
- More proactively aggressive adolescents showed reduced reactivity
Emotion Regulation (reappraisal)

Look Negative - Reappraise = Emotion Regulation (reappraisal success)

- No age differences within adolescence
- But adults were better at reappraisal than adolescents: development between adolescence and adulthood
- Those who were better at the task also reported using reappraisal more in everyday life.
Conclusions

• The teenage brain is a work in progress
• To understand links between brain and behaviour, we need to understand behaviour in more detail
• Data from our CERDIA study are helping to do this: reactivity and regulation both continue to develop but at different times
• The teenage years come with vulnerabilities, but also with amazing opportunities to develop new skills, friends and interests.

A huge thanks to the staff and pupils at participating schools!