

Media, Children and Adolescents

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Media and Children's Emotional Competency

Emotion

- **Emotion** is a state associated with stimuli that are rewarding (i.e. that one works to obtain) or punishing (i.e. that one works to avoid).
- Emotions are **transient** in nature (unlike a **mood**, which is where an emotional state becomes extended over time),



Emotion

- Ekman (1999) discovered that some emotions are in fact **innate** and shared across cultures.
- He classified **anger**, disgust, **fear**, **happiness**, sadness and **surprise** as emotions that are shared across cultures, and called them '**basic emotions**'.




Expression of Emotion

- **Written language:** People can literally state how they are feeling using emotive words such as 'happy', 'sad' or 'ecstatic' (*Wang, Predinger, & Igarashi, 2004*)
- **Speech:** **Pitch** (level, range and variability), **tempo** and **loudness** are considered the most influential parameters for expressing emotion through speech (*Bartneck, 2001*)



Expression of Emotion

- **Facial expression:** people can accurately identify the emotional expression on faces by concentrating on the mouth, cheeks, eyes, eyebrows and forehead (*Etcoff & Magee, 1992*)
 - **Gestures and body language:** This can be explained in the meaning of different head, hand and body movements. (*Givens, 2002*)
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Emotional Intelligence

- Segal (2008) maintains that emotional intelligence is the ability to **recognize** the emotions in yourself and those of others around you,
- **manage** for potential effects of your emotions on others,
- and **consider** all of the emotions in relations and in **decision-making** and problem-solving.

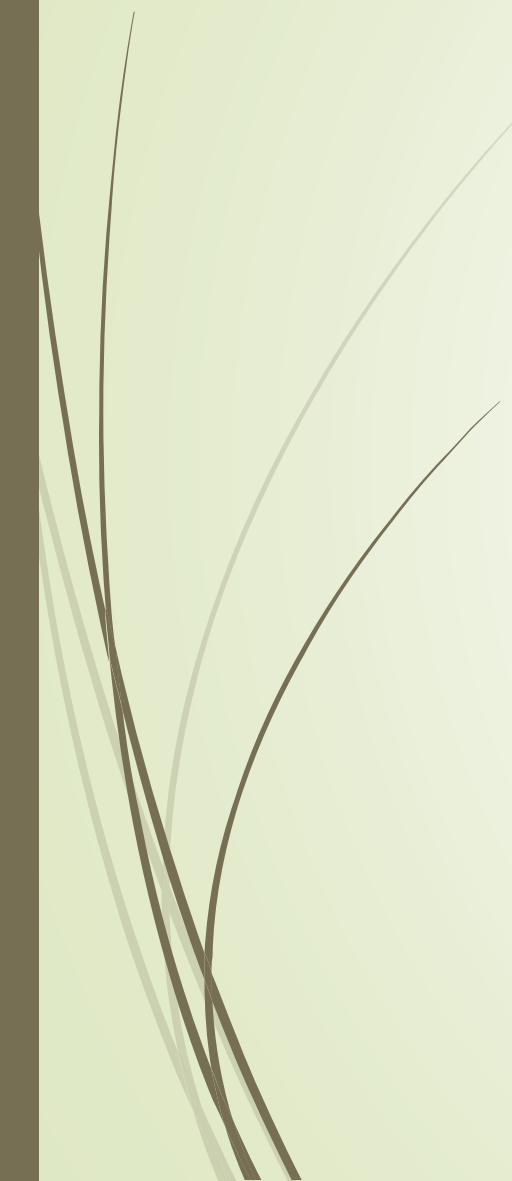


Emotional Intelligence

- Emotional intelligence consists of five key skills (*Segal, 2008*):
- 1: The ability to quickly **reduce stress**.
- 2: The ability to **recognize** and manage your emotions.
- 3: The ability to **connect** with others using non-verbal communication.
- 4: The ability to use **humor** and play to deal with challenges.
- 5: The ability to **resolve conflict** positively and with confidence



Media and Emotional Development

- Children develop their emotional and social capabilities through a complex process.
 - They learn about emotions and about relationships from parents, friends, teachers, and siblings
 - **Electronic media** play a role in children's socialization too.
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Media and Emotional Development

- Much of the effect of media depends on the **content** to which children are exposed.
- What children are watching on screen makes a crucial difference, perhaps even **more than how much time** they spend in front of that screen (*Wilson 2008*).
- A child's **age or developmental** level makes a difference,
- A child's **gender, race, temperament, and home life** also come into play




Media and Emotional Development

- Researchers have found that **older children** can learn about emotions from television content
- In a series of studies, Sandra Calvert and Jennifer Kotler explored how **second through sixth graders** acquired different types of information from their favorite programs *(Sandra Calvert 2003)*.



Media and Emotional Development

- The researchers found that children when asked about programs rated as educational/informative (E/I),
 - children reported learning **socio-emotional** lessons more often than informational or cognitive lessons.
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Media and Emotional Development

- In other words, the educational programs taught them more about **emotions**,
- such as **overcoming fears** and labeling different feelings,
- and about **interpersonal skills**, such as **respect**, sharing, and **loyalty**, than about science, history, or culture



Emotional Empathy

- Empathic children are more **sensitive** to others and are more likely to engage in **socially desirable** behavior in groups
- In one study, children from two age groups (three through five and nine through eleven) watched a movie clip of either a **threatening stimulus** or a **character's fear** in response to a threatening stimulus that was not shown directly.



Emotional Empathy

- Younger children were less physiologically aroused and less frightened by the character's fear than by the fear-provoking stimulus.
- The older children, however, responded emotionally to both versions of the movie *(Barbara Wilson 1985)*.



Emotional Empathy

- Other characteristics of children seem to encourage empathy with media portrayals.
- Children are more likely to share the emotions of a **same-sex** than an opposite-sex character *(Feshbach N 1968)*.
- They are also more likely to experience empathy if they perceive the media content **as realistic** *(Huston A 1995)*



Media and Prosocial Behavior

- ▶ Media can teach **beneficial behaviors** as well.
- ▶ **Prosocial behavior** can be broadly defined as any voluntary behavior intended to benefit another person (*Eisenberg 2006*).
- ▶ **Altruism** is the most common example of prosocial behavior.
- ▶ Others are friendliness, **sharing**, cooperation, **sympathy**, and even acceptance of others from different groups



Media and Prosocial Behavior

- ▶ In one study, kindergartners were assigned to watch either television clip that featured a character engaging in **helping behavior** or **neutral** programming (Friedrich 1975).
- ▶ Two to three days later, all the children were given the opportunity either to work on an art project or to **help another child**.
- ▶ The children who had viewed the prosocial programs were more **helpful** than those who had seen the neutral programs.



Media and Prosocial Behavior

- Mares and Woodard conducted a meta-analysis in 2005.
- Their analysis of thirty-four studies of the prosocial effects of television involving more than 5,000 children found that
- viewing prosocial programming does in fact **enhance children's prosocial** behavior.
- The strongest effects of **prosocial** content were on **altruism** (0.37); *(Mares 2005)*




Media and Prosocial Behavior

- the effect of prosocial content varied by children's **age** and **socioeconomic** status, but not by **gender**.
- Effects increased sharply between the ages of **three and seven** and then **declined** until age sixteen.
- Prosocial television had a greater effect on children from **middle- to upper-class** families than on children from lower-class families.



Media and Prosocial Behavior

- Television **violence** seems to have the strongest impact on **preschool** children.
 - **Prosocial effects** of watching television are strongest for slightly **older children**, peaking at about age **seven or eight**.
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Media and Prosocial Behavior

- The influence of media on **fear and anxiety** is common throughout **childhood**,
- **Younger** children are frightened more by **fantasy** portrayals;
- **older** elementary school children and preteens, more by **realistic** content, including the **news**.



Media and Prosocial Behavior

- Another important variable is a child's **perception** of how **real** the media are.
- Children differ in the degree to which they believe that what they see on the screen is **realistic** (John Wright 1994).
- When media storylines seem **realistic**,
- children are likely to pay **closer attention** to what they are watching and presumably exert more cognitive effort in processing the information.




Media and Prosocial Behavior

- ▶ Another variable in children's susceptibility to the media is the extent to which they **identify** with characters featured on the screen.
- ▶ Children begin developing **attachments** to favorite media characters during the **preschool** years (*Barbara Wilson 2007*).
- ▶ Consistent with social cognitive theory, children are more likely to learn from those they perceive as **attractive** role models




Adolescent's Internet Use and Emotional Competency

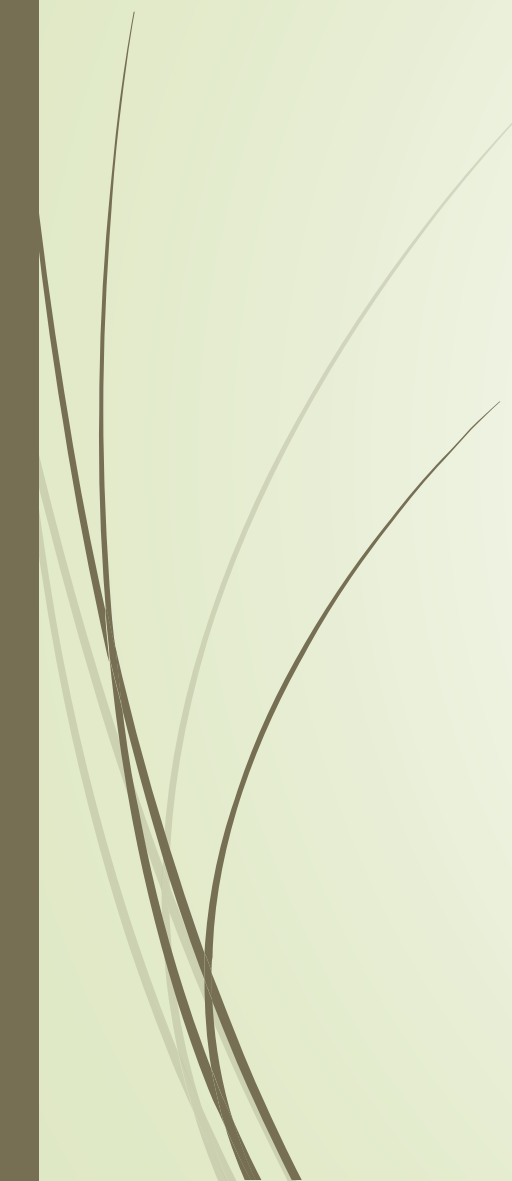


Internet Use and Emotional Competency

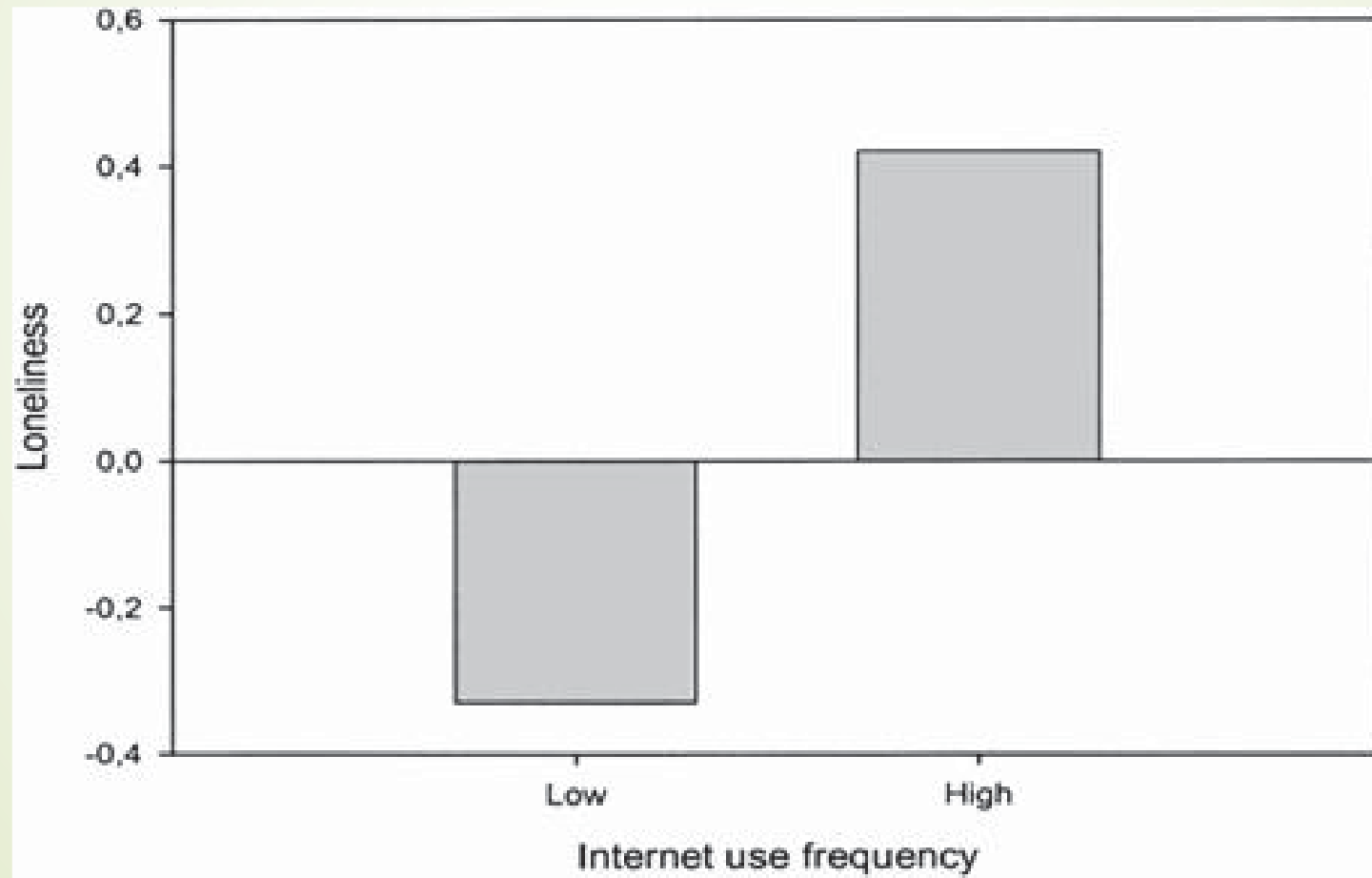
- ▶ Since the internet has become an ingrained part of adolescents' lives the learning of emotional skills has become more of a problem (Merwe 2014).
- ▶ According to Bradberry and Greaves (2009), the biggest mistake people make in **sending messages** online is,
- ▶ not considering how the recipient of the message will **react** when he or she reads it.
- ▶ When talking to someone face to face it is much **easier** to put yourself in his or her shoes.



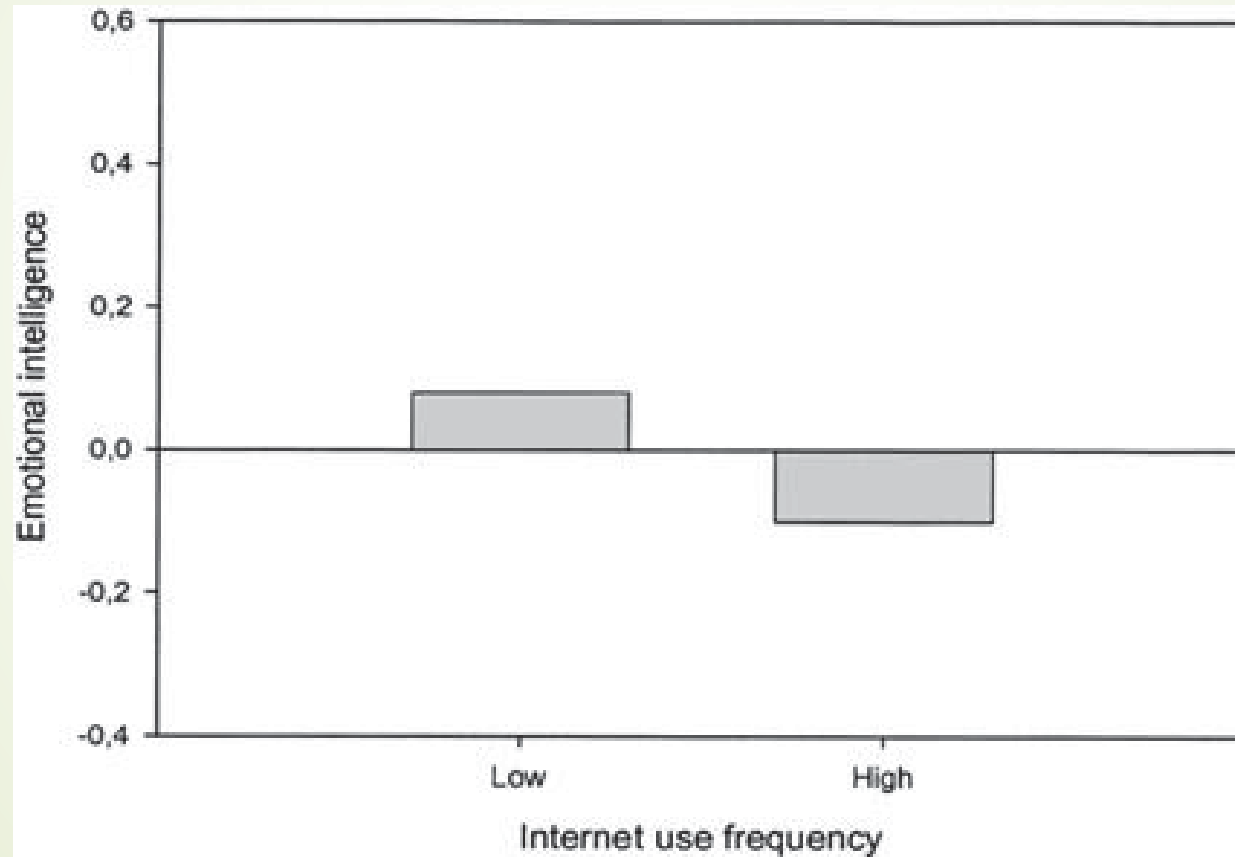
Internet Use and Emotional Competency

- In order to determine whether emotional intelligence varies based on **internet use**, Engelberg and Sjoberg (2004) conducted a series of battery tests.
 - Forty-one individuals, aged 18 to 21, were given these tests, which measured their **level of loneliness**, **internet addiction**, ability to identify emotions in social episodes, and a few other scales.
 - The results of the study indicated that **high- and low-frequency** users of the internet differed in a number of ways from each other.
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Means of loneliness for high- and low-frequency users of the internet (*Engelberg & Sjöberg, 2004*)




Means of emotional intelligence for high- and low-frequency users of the internet (*Engelberg & Sjöberg, 2004*)






Internet Use and Emotional Competency

- ▶ These results therefore suggest that **frequent users** of the internet tend to lack the emotional competence characteristic of high emotional intelligence
- ▶ One reason this might be the case is that people with **high emotional intelligence** simply do not use the internet as much.
- ▶ This is because they prefer face-to-face interactions, owing to them being more sensitive to the emotions of others (Merwe 2014).




Internet Use and Emotional Competency

- ▶ what **emotional and relational skills** are required in the online world :
- ▶ **Attentive reading, thoughtful writing:**
- ▶ Emotional and relational skills have a great deal to do with **picking up** emotional signals in what others write and being aware of the emotional impact of what you yourself write (*Gratch & Marsella, 2005*).
- ▶ As text lacks many of the emotional clues, it is all the more important to pay particular attention to **how words** are used.




Internet Use and Emotional Competency

- **Dealing with your own emotions:**
- In communication carried out at a distance such as via email it is easy to **misinterpret** what is written and to attribute intentions that are not necessarily there.
- **Collaborative working:**
- Collaborating with others, especially online, requires a certain amount of **self-restraint**, as well as concern and **respect** for the others involved (Merwe 2014)




Internet Use and Emotional Competency

- An adolescent with **poor impulse control** can lose sleep over a novel or favorite television show or a computer game.
- Due to the **online disinhibition effect**, people argue, criticize, and insult others without much provocation (*Suler, 2007*).
- Vieru (2009) points out that it could be that using the internet causes adolescents to behave **more aggressively**,
- or that aggressive adolescents **seek out** the internet.




Internet Use and Emotional Competency

- ▶ Whang, Lee, and Chang (2003) found a significant **correlation** between degree of Internet addiction and **negative psychological** states such as **loneliness**, **depression**, and compulsive behavior;
- ▶ Niemz, et al. (2005) found an association between **pathological Internet** use and **self-esteem**,
- ▶ and Black, et al. (1999) between **compulsive computer use** and different psychiatric symptoms as well as general emotional distress.




Internet Use and Emotional Competency

- Marta Beranuya (2009) investigated **maladaptive use** of the Internet and the mobile phone and its relationship to symptoms of psychological distress and mental disorder, as well as to the possible role of **Perceived Emotional Intelligence** in this relationship
- Results indicated that **psychological distress** was related to maladaptive use of both the **Internet** and the **mobile phone**;
- The **components** of Perceived Emotional Intelligence contributed to the explanation of the variance of the general indicators of psychological distress,



Internet Use and Emotional Competency

- Information systems (IS) research has addressed the **motivators** and reasons behind social network use, such as
- the need to **interact socially** with peers (*Gil de Zúñiga et al., 2012; Lin and Lu, 2011*),
- the desire for **self-presentation** or self-disclosure (*Banjanin et al., 2015; Kaplan and Haenlein, 2010*),
- and wanting to experience **enjoyment** (*Lin and Lu, 2011*)
- and improve **psychological well-being** (*Ellison et al., 2007*).



Internet Use and Emotional Competency

- There are however also **negative consequences** to this use, such as **envy** (*Krasnova et al., 2013*)
- and **anxiety** (*Woods and Scott, 2016*), which can lead to discontinuance of social media use.
- Continued social media use despite these risks could be tied to **emotional intelligence**, as the latter moderates the relationship between stress and mental health (*Ciarrochi et al., 2002*).



Problematic Social Media Use

- **Problematic social media use** (PSMU) and **problematic online gaming** (POG) are two different types of specific technology-mediated problematic online behaviors (*Brand, 2016*)
- that are associated with various **negative psychological** and health effects on adolescents and young adults (*Andreassen, 2015; Kuss & Griffiths, 2012*).



Problematic Social Media Use

- ▶ The **Interaction of Person-Affect-Cognition- Execution** (I-PACE) model attempts to understand the mechanisms that lead to such problematic online behaviors (*Brand et al., 2016*).
- ▶ According to the I-PACE model, an individual's core characteristics including
- ▶ **personality** (e.g., trait emotional intelligence),
- ▶ **psychopathology** (e.g., depression),
- ▶ and **coping style** (e.g., rumination) encompass important risk factors that may lead to engagement in specific technology mediated problematic online behaviors (*Brand et al., 2016*).



Problematic Social Media Use

- Adolescents with **low trait EI** are more likely to experience problems in their lives both socially and psychologically (*Mavroveli, 2007*),
- which makes them at increased risk to develop **excessive use of online** activities to cope with their distress and escape from real life (*Beranuy, 2009*)
- To date, empirical studies have shown that **high trait EI** can be an important **protective factor** against the problematic use of smartphones, online gaming, and internet use more generally (*Beranuy et al., 2009; Che et al., 2017; Van Deursen, 2015*).



Problematic Social Media Use

- The role of **depression** on technology-mediated problematic behaviors is well established (*Brand et al., 2016*).
- Adolescent PSMU and POG are both known to co-occur with depression (*Kuss, Griffiths, 2014; Li et al., 2018*).
- It appears adolescents try to **avoid depressive** feelings by engaging in technology use (*Kircaburun, et al., 2018*), which is susceptible to result in excessive and addictive-like use.



Problematic Social Media Use

- **Rumination** has been defined as “the **intrusive thoughts** or images about past mistakes or failures that cause negative feelings when they occur” *(McLaughlin, 2007)*,
- and is a **maladaptive emotion regulation** strategy known to perpetuate and exacerbate negative affect *(McLaughlin 2011)*.



Problematic Social Media Use

- **Maladaptive coping style** leads to poor **affective and cognitive** responses and to the development of specific technology-mediated problematic online behaviors (*Brand et al., 2016*).
- Adolescents who are more prone to ruminate may attempt to avoid these negative thoughts and images by excessively engaging in **online activities**.



Problematic Social Media Use

- Increased **rumination** has been associated with problematic smartphone use (*Elhai, Tiamiyu, & Weeks, 2018*) which often co-occurs with PSMU (*Salehan & Negahban, 2013*).
- Extant literature suggests that **trait EI** is positively associated with mental health and **negatively associated with rumination and depression** (*Mavroveli et al., 2007; Petrides et al., 2017; Rudenstine & Espinosa, 2018*).

Problematic Social Media Use

- Kircaburuna et al. (2019) in their study found that **depression** was a significant predictor of **problematic social media** use but not problematic online gaming
- Adolescents who had **higher trait EI** and mindfulness had reduced depression, and in turn, reduced PSMU.
- However, those who became problematic users of social media felt **more depressed** (Li et al., 2018).
- Furthermore, **ruminatio**n affected PSMU positively (Kircaburuna et al. 2019) .



Problematic Social Media Use

- Süral et al. (2019) investigated the direct and indirect relationships between **trait emotional intelligence** and **problematic social media** use in adults via social media use motives.
- The results showed that trait emotional intelligence was directly and indirectly associated with problematic **social media use** via two social media use motives:
 - (i) **expressing** or presenting a more popular self, and
 - (ii) passing **time**



Media Use and Brain in Adolescence



Adolescent's Brain

- ▶ The results of several studies demonstrate that **cognitive and socio-affective** development in adolescence is accompanied by extensive changes in the structure and function of the **adolescent brain**
(Blakemore, S. J. 2014)
- ▶ The maturation of these connections is related to **behavioral control**,
- ▶ for example, connections between the **prefrontal** cortex and the subcortical **striatum** mediate age-related improvements in the **ability to wait for a reward**
(Achterberg, M., 2016)



Adolescent's Brain

- Interestingly, changes in grey matter volume are observed most extensively in brain regions that are important for **social understanding** and **communication** such as
- the **medial prefrontal** cortex,
- **superior temporal cortex**
- and **temporal parietal junction** *(Mills, K. L., 2014)*



Brain and social media use

- There is evidence that the density of grey matter volume in the **amygdala**, a structure associated with emotional processing, is related to **larger offline social networks** (Bickart, K. C., 2011)
- as well as larger **online social networks** (Von Der Heide, R., 2014)
- This suggests an important interplay between actual social experiences, both offline and online, and brain development.



Neural responses to online social rejection

- ▶ Using functional MRI (fMRI), researchers have observed **increased activity** in the **orbitofrontal cortex** and **insula** after participants experienced **exclusion**, possibly signaling increased **arousal** and negative affect (Cacioppo, S. et al. 2013)
- ▶ whereas spending more time with friends **reduced ACC response** in adolescents to social exclusion (Masten, C. L., 2012)



Neural responses to online social rejection

- Neuroimaging studies revealed that, being **rejected** resulted in increased activity in the **medial frontal cortex**, in both adults (*Achterberg, M., 2016*) and children (*Achterberg, M. et al. 2017*)
- the studies suggest that adolescents show **stronger rejection expectation** than adults,
- and **subgenual ACC** and **medial frontal cortex** are critically involved when processing online exclusion or **rejection**.



Neural responses to online social acceptance

- Most pronounced activity was found in the **ventral striatum**, together with the **ventromedial prefrontal** cortex and **ventral tegmental area**,
- which is consistently reported as a key region in the brain for the subjective experience of **pleasure** and **reward** (Haber, S. N. 2010), including **social rewards** (Guroglu, B. et al. 2008)



Neural responses to online social acceptance

- Likewise, being **socially accepted** through likes in the chat room task resulted in increased activity in the **ventral striatum** in children (*Achterberg, M. et al. 2017*), adolescents (*Gunther Moor, B., 2010*) and adults (*Achterberg, M., 2016*)
- This response is **blunted** in adolescents who experience **depression** (*Silk, J. S. et al. 2014*) or who have experienced a history of **maternal negative affect** (*Tan, P. Z. et al. 2014*)

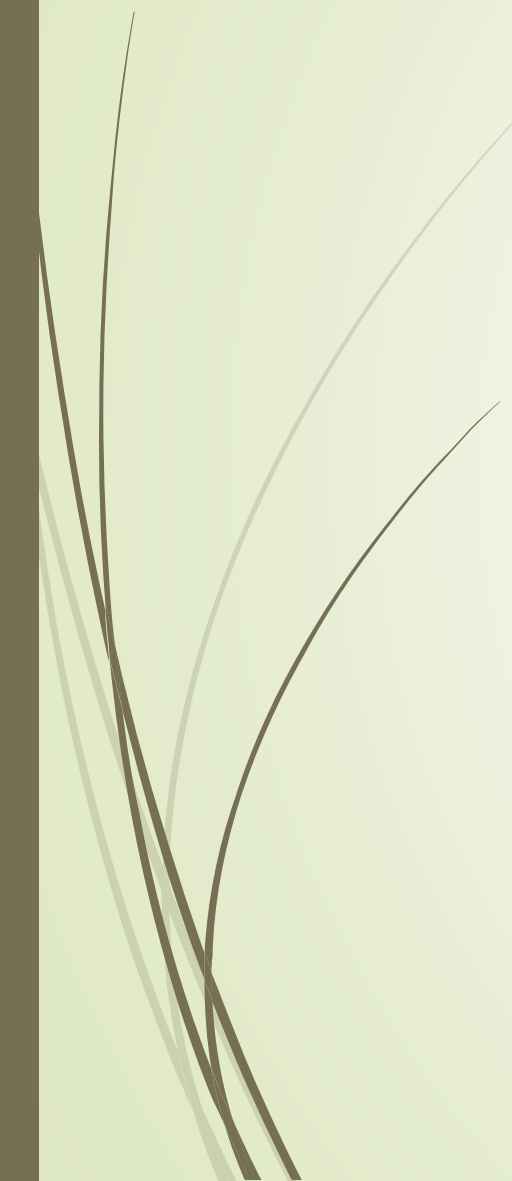


Neural responses to online social acceptance

- Adolescence is often defined as a period of increased **risk taking** and **sensation-seeking**,
- Recently, through **social media**, new forms of **risk-taking** are expressed,
- These observations suggest that **social media** may be the new way in which sensation seeking behavior is expressed



Neural responses to online social acceptance

- ▶ activity in the **ventral striatum** to monetary rewards peaks in **mid-adolescence** (*Silverman, M. H., 2015*)
 - ▶ These findings may suggest general **reward sensitivity in adolescence** such that reward centers show increased sensitivity to **social reward** in adolescence.
 - ▶ Social reward sensitivity may be a strong reinforcer in social media use.
 - ▶ adolescents showed sensitivity to **“likes”** of peers on social media (*Sherman, L. E. 2017*)
- 



Neural responses to online social acceptance

- ▶ In a controlled experimental study, adolescents showed more activity in the **ventral striatum** when viewing images with **many vs. few likes**, and this activation was stronger for **older adolescents** and college students compared to younger adolescents (*Sherman, L. E. 2017*)
- ▶ These findings suggest that heightened reward sensitivity in mid-adolescence (*Silverman, M. H., 2015*) may also be present for **social rewards** such as likes on Instagram



Neural responses related to emotion regulation

- One factor that affects how adolescents process (social) media relates to the **intense emotional experiences** that usually accompany adolescence (*Dahl, R. E. 2011*).
- Several paradigms have also shown that adolescents are more **aggressive** after **being rejected online**



Neural responses related to emotion regulation

- More activity in dorsolateral prefrontal cortex (DLPFC) after rejection was associated with less subsequent aggression (*Achterberg, M., 2016*),
- possibly indicating that increased activity in the DLPFC helps individuals to control their anger following rejection.



Neural responses related to emotion regulation

- One question for future research is whether **regulation or control** of media-generated emotions can be trained.
- It was previously found that **training of executive functions** is associated with increased activity in DLPFC (*Constantinidis, C. 2016*),
- but it remains an open question whether activity in DLPFC can be influenced by **regulation training** and behavioral control,
- and whether this results in changes in the functional and structural properties of the brain.



Conclusion

- Social media use can affect the brain functions and structure through
- **emotional brain** network
- And **reward system** network
- DLPFC maturation is protective factor
- It can be concluded that impaired emotional brain (**depression**)
- and reward system (**ADHD**) can be related to problematic social media use



Thank You for Your
Attention