Social Cognition: Affective Recognition & Evaluation

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How I got involved



Kevin Ochsner can't be at the meeting



Sorry! Ann can fill in... I tried to get her up to speed

Ha, ha, ha...Seriously? I am no Kevin Ochsner!? I will give it a go, but I am not a social cognitive neuroscientist...



Background

Socio-emotional processing stream



Ochsner (2008), Biological Psychiatry

From CNTRICS 1st meeting Affect Recognition and Evaluation

Strengths

- Linked to neural systems
- Readily measured in humans
- Use in imaging
- Associated with functional outcomes
- Impaired in schizophrenia (especially faces)

Limitations

- Animal models limited
- Cognitive mechanisms unclear
- Only limited evidence about link to neuropsychopharm

Construct Definition

Affective Recognition and Evaluation: The ability to detect, recognize and judge the affective value of both linguistic (e.g., seen or spoken words and their prosodic contour) and nonlinguistic (e.g., images of people, facial expressions, eye gaze, scenes) stimuli.

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More Background

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- Fear conditioning
- Affective significance of stimulus
- Ambiguity, novelty
- Nucleus Accumbens responds to:
- Prediction, anticipation of rewards; temporal (mis)prediction

• Receipt of rewards; values

• Valence of outcomes



Amygdala responds:

- When viewing emotional faces, not asked to report experience
- Viewing untrustworthy faces, whites of eyes, direct eye gazes,

Rostral, ventral ACC and medial PFC respond when:

- Viewing emotional faces and asked to report experience
- Asked to give like/dislike judgments

2. Recognizing Affective Stimuli



Fear faces

- May be attention-independent (Anderson, Vuilleumier, Whalen)
- Influenced by anxiety, depression (*Bishop*, *Sheline*)
- Response enhancement related to short 5-htt allele (*Hariri*)
- Arousing stimuli in general (Anderson, Hamann)
- Affective Salience? Potential threats?

Disgust faces

- Inputs from viscera (Craig)
- Disgusting Odors (Keysers)
- Responds to other negative face types and aversive memories, images (*Phan*, *Wager*)
- Aversive stimuli in general?

More on Amygdala



More activation in perception than emotional experience (Wager et al 2008 meta-analysis)
Salience (Liberzon, Whalen)

More Background

Socio-emotional processing stream



4. High Level Mental State/Trait Inference



Why is this man smiling? Happy?

4. High Level Mental State/Trait Inference



Why is this man smiling? Happy? Or manipulative?

Context Modulation

Likely requires higher level inferences than facial affect recognition w/o context Activations in mPFC (Gallagher & Frith; Mitchell; Saxe)

> Medial PFC & pericingulate

Affect Recognition in Schizophrenia

■ Most studies use tests of facial affect recognition; some on vocal prosody recognition (e.g., Kerr & Neale; Leitman et al) Behavioral and fMRI studies, most w/o context Important links to functional outcome Methodological considerations ■ Judgment related to the self? Differential versus generalized deficit

Differential vs. Generalized Deficit Silverstein presentation at 2nd CNTRICS meeting

- Matching on discriminating power (reliability, task difficulty; cf. Chapman & Chapman, 1978)
 - Could unravel sensitivity to detect between group differences
- Process-oriented approach (cf. Knight, 1984; Knight & Silverstein; 2001)
 - Requires clearly stipulating the specific deficit (e.g., facial affect recognition) from general deficit (e.g., face recognition)

Facial Affect Recognition in Schizophrenia Differential Deficit?

- Some say yes (e.g., Borod et al., 1993; Edwards et al., 2001; Gaebel & Wolwer, 1992; Heimberg et al., 1992; Kosmidis et al., 2007; Poole et al., 2000; Shaw et al., 1999; Walker et al., 1984)
- Some say no (e.g., Addington and Addington, 1998; Baudouin et al., 2002; Hooker & Park, 2002; Kerr & Neale, 1993; Kohler et al., 2000; Mueser et al., 1996; Salem et al., 1996; Schneider et al., 1995).
- Keep this in mind....