Emotion, Emotion Regulation and Gun Violence

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Why

- 31,000 Firearm Deaths*

  - Comparable to motor vehicle accidents

- American under 40 more likely to die from handgun fire than any specific disease*

*Center for disease control, 2012
Typology of Violence

General Violence

- Instrumental
  - Aggression means to an end, not the primary goal

- Affective (impulsive)
  - 90% of aggression primarily affective

Gun Violence (Kinsherff et al, 2013)

- Targeted / Predatory
  - E.g. Mass shootings
  - Garners much media attention, but only account for small % of gun violence

- Impulsive (affective)
  - Primary form of gun violence
Psychological Risk factors for Violence

- History of Violence
- Substance Use Disorders / Problems
- Severe Mental Illness / Active Mental Illness
  - E.g., Psychosis, Bipolar, Severe Depression
- Psychopathy and/or (some) Personality Disorders
- Impulsivity
- Proneness to negative attitudes / emotions
Psychological Risk factors for Gun Violence

- History of Violence
  - Violent crime, domestic violence

- Substance Use Disorders / Problems

- Severe Mental Illness / Active Mental Illness*
  - E.g., Psychosis, Bipolar, Severe Depression

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- Impulsivity

- Proneness to negative attitudes / emotions
So what is the relationship between emotion and gun violence?
Emotion and Gun Violence

Potential relevant articles N = 140

Excluded N= 127
- Victims of gun violence
- Not related to violence
- Not related to emotion

Remaining articles N=13

Search engines
• Psychinfo & Pubmed

Search Terms
• Keywords = (Gun or firearm) and (Emotion or Affect)
Emotion and Gun Violence

- Jealousy was associated in gun violence in IP murder suicide (Easteal, 1994; Galta et al, 2010).

- Rage and Hatred / Revenge were the most common motives for murder across 4 SMI diagnoses (Matejkowski et al, 2008).

- Negative emotion (anxiety, anger) and/or threat reduce detection ability and shooting accuracy (Nieuwenhuys et al, 2010; 2011;2015; Baumann & DeSteno, 2010; Kleider et al, 2009; Scribner 2016).
Motives for Murder

Endorsed (%)

1 2 3 4

Series1 Series2 Series3 Series4 Series5

Matejkowski et al, 2008
So people use firearms when they are angry/upset and being angry/upset makes them less accurate using firearms.
PTSD is associated with anger, hostility and gun violence in veterans (Freeman et al, 2003)

Target shooters reported more aggression than the general population (Erle et al, 2017)

Aggression problems were not associated with owning a gun, but was associated with carrying one (Swanson et al, 2015).
Hostility and Gun Use among Veterans

Hostility (AQ)

% Fired gun at someone (non combat)

* = all group differences p < .05

Freeman et al, 2003
Gun Access and Aggression

Swanson et al, 2015

* p < .05
So angry and aggressive individuals are more likely to carry/use guns.
Emotion and Gun Violence

- Poor emotion regulation, especially anger regulation, may mediate the relationship between severe mental illness, substance abuse and homicide risk (Sher et al, 2015).
Do emotion regulation deficits discriminate violent individuals with and without a history of gun violence?
Emotion Regulation

- Process by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions.
- A person's ability to effectively manage and respond to an emotional experience
Poor Emotion Regulation
(Emotion Dysregulation)

- Vulnerability to negative emotion
  - High sensitivity, reactivity, and slow return to baseline
  - Influences emotional arousal

- Poor coping skills
  - Inability to: manage social interactions, awareness of relevant stimuli, identify and label emotional experiences, manage arousal

- Maladaptive responses to others expressions of emotion
  - Wants, thoughts, goals. Others responses often trigger emotional arousal
So why would I wonder if emotion regulation deficits discriminate violent individuals with and without a history of gun violence?
# Violence and Emotion Regulation

<table>
<thead>
<tr>
<th></th>
<th>HV (n=103)</th>
<th>PC (n = 67)</th>
<th>IED (n = 207)</th>
<th>$F$</th>
<th>$\eta_p^2$</th>
<th>Post-hoc</th>
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<tbody>
<tr>
<td><strong>Affect Lability Scale</strong></td>
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<tr>
<td>Depression</td>
<td>15.44 (4.73)</td>
<td>20.90 (7.27)</td>
<td>25.66 (6.67)</td>
<td>89.29***</td>
<td>0.33</td>
<td>IED &gt; PC &gt; HV</td>
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<tr>
<td>Hypomania</td>
<td>17.40 (5.66)</td>
<td>22.62 (7.67)</td>
<td>27.48 (7.30)</td>
<td>71.72***</td>
<td>0.28</td>
<td>IED &gt; PC &gt; HV</td>
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<td>Biphasic</td>
<td>11.45 (3.27)</td>
<td>15.48 (5.90)</td>
<td>19.36 (6.21)</td>
<td>70.85***</td>
<td>0.28</td>
<td>IED &gt; PC &gt; HV</td>
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<tr>
<td>Anxiety</td>
<td>8.35 (2.56)</td>
<td>11.49 (5.04)</td>
<td>14.73 (4.50)</td>
<td>80.49***</td>
<td>0.31</td>
<td>IED &gt; PC &gt; HV</td>
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<tr>
<td>Anger</td>
<td>7.89 (1.99)</td>
<td>10.52 (4.24)</td>
<td>17.84 (5.02)</td>
<td>206.52***</td>
<td>0.53</td>
<td>IED &gt; PC &gt; HV</td>
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<tr>
<td>Anxiety/Depression</td>
<td>9.21 (2.58)</td>
<td>13.25 (5.83)</td>
<td>17.34 (5.98)</td>
<td>82.69***</td>
<td>0.31</td>
<td>IED &gt; PC &gt; HV</td>
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<td><strong>Affect Intensity Measure</strong></td>
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<td>Negative Intensity</td>
<td>13.81 (4.73)</td>
<td>18.70 (7.00)</td>
<td>21.35 (5.62)</td>
<td>60.47***</td>
<td>0.25</td>
<td>IED &gt; PC &gt; HV</td>
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<td>Negative Reactivity</td>
<td>20.65 (4.78)</td>
<td>22.61 (4.87)</td>
<td>21.96 (5.07)</td>
<td>4.89**</td>
<td>0.03</td>
<td>IED, PC &gt; HV</td>
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**p < .01, ***p < .001.**

*Fettich, McCloskey, Look & Coccaro, 2015*
Violence and Negative Urgency

- Only negative urgency discriminated IED from Psychiatric Controls

Puhalla... McCloskey, 2016

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<td>MANCOVA results for motivational system indexes and the impulsivity domains.</td>
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<td>Motivational system indexes</td>
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<tr>
<td>Reward sensitivity b, c</td>
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<td>Punishment sensitivity b, c</td>
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<td>Impulsivity domains</td>
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<td>Premeditation</td>
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<td>Negative urgency a, b, c</td>
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<td>Sensation seeking</td>
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<td>Positive urgency b, c</td>
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Note: Covarying for age, gender, race, and education. All group means are adjusted; for all significant differences between groups, $p < .05$.

*** $p < .001$.

a IED $\neq$ PC.

b IED $\neq$ HV.

c PC$\neq$ HV.
Emotion Regulation Pathway

Slide from Davidson 1999
fMRI of Emotion Processing in IED

- IED (n = 20) subjects show increased amygdala activation to angry faces (compared to controls)

- ... and to emotionally charged pictures (again, compared to controls)


McCloskey, et al, in prep
Do emotion regulation deficits discriminate violent individuals (those with IED) with and without a history of gun violence?
**IED and Gun Violence**

Collaborative Psychiatric Epidemiological Surveys [CPES] dataset

- IED = 923
- Non IED = 9,417

\[X^2 = 102.71, p < .0001\]

Mccloskey, Nanney, Constans et al, in prep
Affect Lability and Gun Violence

McCloskey et al (pilot data)

\[ d = 0.55 \quad d = 0.26 \quad d = 0.98 \quad d = 0.27 \quad d = 0.64 \]
Affect Intensity and Gun Violence

McCloskey et al (pilot data)

$d = .92$

$d = .81$
Impulsivity and Gun Violence

McCloskey et al (pilot data)

ATTENTIONAL

MOTOR

NONPLANNING

IED Gun  IED no Gun

Bar Chart

Barratt Impulsivity Scale

$\hat{d} = .16$

$\hat{d} = .09$

$\hat{d} = .52$
So **MAYBE** emotion regulation deficits are more severe for those with a history of (attempted) gun violence among those with IED.

**IF** true what does this mean?

**What does this not mean?**
Take home messages

- Gun violence is associated with both acute distress/anger and a tendency towards anger/aggression.
- Violence in general is associated with poor emotion regulation.
- We (psychology) need to look more into what psychological processes present as risk factors for gun violence in excess of general propensity for violence.
  - These findings will need to be put in the context of both sociocultural factors and motivations for gun violence (more cross talk).
  - If so we may be able to more effective (better targeted) prevention and interventions for gun violence.
Thank you

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