

2022 Young Investigators
Abstracts of Research Presented at the 24th ISRA Meeting (Ottawa, Canada)
**** All Young Investigators listed in bold**

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Title: Emotion recognition links to reactive and proactive aggression across childhood: An exploratory-replication multi-study design

Negative emotion recognition has been linked to psychopathic traits and aggression in children. However, what types of emotion recognition (i.e., total, insensitivity, misspecifications, biases) and what functions of aggression (i.e., reactive vs. proactive) remains unclear. Here we addressed these gaps in two ethnically diverse community samples of children and their caregivers. Exploratory analyses were performed in study 1, which included children aged 4 and 8 (N = 299; 50% boys). Confirmatory analyses were performed in study 2, which included children aged 5 to 13 (N = 374; 50% boys). Children performed a behavioral task to assess their emotion recognition (sad, fear, angry, and happy facial expressions) while their caregivers reported on their overt proactive and reactive aggression. In both studies, we found that higher negative emotion recognition was associated with increased proactive aggression in early childhood, while higher anger insensitivity-i.e., identifying angry faces as showing no emotion-was related to increased proactive aggression in middle childhood. Additionally, a bias towards happy facial expressions-i.e., mistaking negative emotions as being happy-was consistently related to increased reactive aggression in early childhood. Together, this suggests that blunted negative affect processing is linked to proactive aggression, however, the importance of different forms of emotion recognition is sensitive to the function of aggression and developmental period of the child

Alisson P. de Almeida, University of São Paulo; Marcus V. C. Baldo, University of São Paulo; Simone C. Motta, University of São Paulo

Title: Dynamics in brain activation and behaviour in acute and repeated social defensive behavior

In nature, agonistic encounters are recurrent and related, in general, to the lack of resources such as food and territory. Adequate defences against a conspecific aggressor are essential for the individual's survival and the group's integrity. However, repeated social defeat is a significant stressor promoting several behavioural changes including social defence per se. In this work, we aimed to investigate the impact of repeated social defeat on the defensive behaviour of defeated animals and the possible neural bases behind this behavioural change. For this, we submitted the animals one or three times to the resident-intruder paradigm and compared the defensive behaviour of these animals. We also evaluated the activation pattern of brain areas related to social defence behaviour. Our data do not suggest a difference between the aggressive behaviour

of resident animals during the intruder's first and third exposure. About the intruder, we observed that they, during their third exposure, spend more time in passive defence (e.g., freezing) and less time in exploration compared to their first day of exposure to social defeat. Furthermore, we observed a change in the pattern of neural activity characterized by a lower mobilization of nuclei related to the processing of social cues. The balance between the activity of these regions and nuclei involved in the organization of defence may be the basis for the behavioural changes observed. Future studies are needed to functionally investigate the role of these structures in the impact of a previous experience of social defeat on defensive behaviour.

Kwan-Lamar Blount-Hill, Arizona State University

Title: Diagnosing the spatial correlates of hate crime

Previous studies analyzing hate crimes have identified spatial patterns in their occurrence. For example, Gutierrez (1996) finds that spatial clustering of potential victims of hate crime enhances vulnerability; Soule and Earl (2001) find that state characteristics are predictive of hate crime occurrence; Gladfelter, Lantz, and Ruback (2017) find these incidents concentrate in places high in social disorganization; Jendryke and McClure (2019) find that proximity to hate groups predicts occurrence; and Lantz and Wenger (2021) showed that hate crime, like other types of crime, is both spatially concentrated and stable. In the current study, I apply risk terrain modeling in Washington, D.C., the hyperlocal spatial features that enhance the risk of hate crime occurring. This method goes beyond identifying macro-social characteristics of wide spaces wherein hate crime occurs to identifying particular physical features that enhance risk of hate crime at the city block level. Previous uses of RTM have demonstrated robust predictive power for several classes of crime and correlates down to specific business types and combinations of spatial features. This will be a novel application of the method to more precisely identify the geographic nature of hate crime.

Ana Bravo, Universidad de Córdoba; Rosario Ortega-Ruiz, Universidad de Córdoba; Christian Berger, Pontificia Universidad Católica de Chile; Eva Romera, Universidad de Córdoba

Title: Trajectories of bullying defense in early adolescence: Association with empathy and moral disengagement over time

Defending behaviors play a relevant role in stopping the aggression and in preserving the well-being of the victims. Despite their relevance, no previous research has explored whether adolescents change their tendency to defend and whether different defending trajectories could be related to their moral disengagement and affective and cognitive empathy levels over time. A total of 3,303 students (49.8% girls), with an average age of 12.61 years at wave 1, participated in the study. Latent Class Growth Analysis found four defense trajectories as the best solution. The majority of adolescents (84.3%) were identified as high-stable defensive trajectory, while the others presented a decreasing (5.1%), increasing (3.9%) and low-stable (6.7%) defensive trajectory. Multigroup Analysis found that adolescents with decreasing trajectory presented a negative tendency in affective empathy, adolescents with increasing trajectory presented a positive tendency not only in affective but also in cognitive empathy, and a negative tendency in moral disengagement. Comparative analysis found differences in the evolution of all study

variables between adolescents with high-stable and decreasing trajectories, as well as between adolescents with increasing and decreasing trajectories. Adolescents with increasing and low stable trajectories showed differences for the evolution of both kind of empathy but not for moral disengagement levels over time. Taken together, our results suggest that high affective empathy levels would play a relevant role in decreasing defensive behavior. By contrast, the increase in defensive behavior would depend on a combination of different emotional, cognitive, and moral aspects, suggesting that it is a complex and dynamic behavior.

Ana Bravo, Universidad de Córdoba; Rosario Ortega-Ruiz; Eva Romera, Universidad de Córdoba

Title: The relation between defending and popularity networks in the adolescence

Bullying is an aggressive behavior that involves not only the bullies and the victims, but also peers who play different roles in such situations. Previous studies underline the relationship between high popularity levels and defenders, and low popularity levels and victims. However, few studies have explored this relationship from a longitudinal social network perspective. The present study aims to describe a) whether adolescents recognized as defenders by victims increase in popularity over time, b) whether victims reduce their popularity levels over time, and c) whether having high levels of popularity promote being defended in bullying situations. A total of 28 classrooms with 718 students (42% girls) with ages between 9 to 16 years at Wave 1 ($M = 11.89$; $SD = 1.52$) were part of this study. By applying longitudinal multivariate network analysis, it was shown that being a defender or a victim does not influence changes in their popularity levels over time. Whereas adolescents who are being victimized are more likely to be defended if they have a higher popularity levels, and having defenders promotes being defended by more peers over time. Together, our results suggest the importance of promoting the popularity position of at-risk adolescents and the relevance of developing peer support networks to reduce the impact of victimization.

Karolina Dyduch-Hazar, SWPS University of Social Sciences and Humanities; Kinga Szymaniak, University of Warsaw; Blazej Mrozinski; SWPS University of Social Sciences and Humanities

Title: Anticipated punishment impedes retaliatory aggression, anticipated reward motivates proactive aggression

Retaliatory aggression can be rewarding. Yet would individuals still retaliate to reap hedonistic rewards, if doing such would be costful? In a registered experiment, participants ($N = 243$) received provoking (vs. unprovoking) feedback from a non-existing in reality partner. They were then told that either themselves or their partner will be selected to pick the number of aversive images the other one will have to describe in detail in order to complete the study. Participants were always assigned to pick the number of images for their partner to describe, yet depending upon random assignment, participants were told they will either lose (punishment from aggression) or gain (reward from aggression) one SONA research point for every assigned image. Provoked participants assigned more images than unprovoked participants, albeit this effect was not qualified by a significant interaction of provocation and expected outcome of

aggression. Participants who were led to believe aggression would bring them benefits assigned more images than participants who were led to believe that aggression would bring them loss. Reward (vs. punishment) from aggression explained the majority of variance in aggression, showing that unprovoked participants who thought aggression will bring them benefits were almost twice as aggressive as provoked participants who believed aggression will cost them. Controlling for sensation seeking (i.e., tendency to seek immediate rewards in the environment) did not change the pattern of results. These findings suggest that retaliatory aggression can be diminished by anticipated punishment, but proactive aggression can be elicited by anticipated reward.

Karolina Dyduch-Hazar, SWPS University of Social Sciences and Humanities; Blazej Mrozinski, SWPS University of Social Sciences and Humanities

Title: Revenge seeking following extrinsic reward

People often seek revenge to “reap hedonistic rewards”. However, if revenge is solely driven by desire to feel good and do not feel bad, then extrinsic reward should impede revenge seeking. In two registered experiments, we tested whether satisfaction from receiving extrinsic reward (i.e., unanticipated monetary reward) impedes revenge following provocation. Study 1 (N = 114) showed that satisfaction from receiving an unanticipated monetary reward decreased thinking about getting back at the provocateur. Study 2 (N = 213) found that provoked participants aggressed against their wrongdoers despite fulfillment from receiving the unexpected monetary reward. This evidence indicates that feeling of gratification is insufficient to impede retribution following provocation, suggesting that avengers not only want to feel pleasure when retaliating, but want to balance the scales by sending the provocateur a message

Karolina Dyduch-Hazar, SWPS University of Social Sciences and Humanities; Blazej Mrozinski, SWPS University of Social Sciences and Humanities; Agnieszka Golec de Zavala, Goldsmiths University of London; David S. Chester, Virginia Commonwealth University

Title: Pleasure of revenge fosters both retribution and reconciliation

Revenge can be rewarding, which reinforces further acts of vengeance. Yet, might vengeful pleasure also promote prosocial outcomes? The present research tests the affective counterbalancing hypothesis, which posits that revenge-related positive affect helps people forgive transgressors by counteracting a major obstacle to reconciliation (i.e., the negative affect people feel towards the transgressor). Three registered experiments (total N = 849) revealed empirical support for this hypothesis, finding that revenge not only helps bring provoked participants back towards affective homeostasis, but that these improvements in mood predicted greater subsequent motivations to both seek revenge and to forgive. These findings buttress the reinforcing nature of vengeful pleasure. Further, they suggest that the pleasure of revenge might also be harnessed as a means to promote reconciliation.

Lena Hofhansel, RWTH Aachen University & Research Center Jülich; Peter Pieperhoff, Research Center Jülich; Frank Schneider, University of Düsseldorf; Jürgen Müller, University of Gottingen; Katrin Amunts, Research Center Jülich & University of Düsseldorf; Carmen Weidler,

RWTH Aachen University; Benjamin Clemens, RWTH Aachen University; Adrian Raine, University of Pennsylvania; Ute Habel, RWTH Aachen University & Research Center Jülich

Title: Morphology of the criminal brain: Gray matter reductions are linked to impulsive and antisocial behavior in offenders

Aggression and psychopathy are complex conditions determined by a variety of emotional as well as interpersonal problems. Only a few studies analyzed a probable link between these specific factors and brain morphology. We performed two studies investigating the association of aggression and psychopathy with brain structure in forensic cohorts, aiming to explicitly analyze the influence specific sub-features that determine these complex conditions. In both studies we could find a significant negative link between aggression and psychopathy scores with gray matter volumes. In the first study (voxel-based-morphometry analysis; n=27 violent offenders) it was found that psychopathy was negatively correlated with prefrontal gray matter volume and that this result was primarily driven by the antisocial behavior domain. Further, other cortical regions, i.e. in right superior frontal and left inferior parietal regions exposed less grey matter volume with increasing antisocial behavior. With the second study (deformation-field-morphometry; n=39 psychopaths) we could replicate these findings by again, finding a negative link between impulsive-antisocial behavior and grey matter volume in cortical areas. Furthermore, the second study could provide a significant link between impulsive and antisocial behavior and gray matter reductions in regions involved in a cortico-basal ganglia-thalamo cortical loop. These results outline a negative link between especially interpersonal problems, such as impulsive and antisocial behavior and gray matter volumes in regions crucial for social information processing, action selection and emotion regulation. Further we determined the importance of analyzing sub-features that contribute to aggressive and psychopathic behavior

Gretchen Perhamus, University at Buffalo, The State University of New York; Jamie M. Ostrov; University at Buffalo, The State University of New York

Title: Irritability in forms and functions of aggression in early childhood: A multiple time point, multiple-reporter study

Irritability has been shown to have stronger associations with reactive than proactive functions of aggression (Brotman et al., 2017). However, the role of irritability in relational aggression is understudied. Hostile attribution biases (HAB) have been implicated in both irritability (Leibenluft & Stoddard, 2013), and reactive aggression (Orobio de Castro et al., 2002). This study prospectively tests a model in which HAB mediates irritability's relations with aggression, with hypothesized form-specific relations between HAB and aggression. Moderation by gender and a reversed alternative model (aggression to irritability, mediated by HAB) are also tested. Participants are 300 preschoolers (Mage = 44.70 months), with data collected at three time points over two academic years. Different reporters are used at each point of the mediation model, with teachers reporting on irritability, HAB assessed using child interviews, and RA's reporting on aggression. Path analyses show irritability predicts increases in all subtypes of aggression (β 's = .21 - .37, p 's < .01), with moderation by gender, such that irritability predicted increases in proactive relational aggression for boys only (β = .27, p = .01), and increases in reactive relational aggression for girls only (β = .44, p < .001). Further, irritability marginally predicted

increases in HAB-I for boys only ($\beta = .19, p = .05$). No significant indirect effects were found. Results show the importance of considering both forms and functions of aggression, and forms of HAB, when investigating irritability, and point to potential gender differences in the role of irritability in relational aggression in early childhood.

Gretchen R. Perhamus, University at Buffalo, SUNY; Kristin J. Perry, University at Buffalo, SUNY; Dianna Murray-Close, University of Vermont; Jamie M. Ostrov, University at Buffalo, SUNY

Title: Pure and co-occurring relational bullying and victimization: Roles of stress reactivity and hostile attribution biases in early childhood

Involvement in bullying, as either perpetrator or victim, is associated with negative developmental outcomes, and those who are both perpetrators and victims (i.e., bully-victims) are especially at risk (e.g., Cook et al., 2010). Past work investigating bully-victims has often adopted categorical approaches and has largely focused on physical forms of bullying and victimization. This pre-registered study tested the utility of bifactor models for measuring pure and co-occurring relational bullying and victimization experiences dimensionally and tested independent effects and interactions of sympathetic nervous system reactivity (i.e., SCL-R) and hostile attribution biases (HAB; Crick & Dodge, 1994) in predicting changes in these experiences over one year in early childhood. Using data from 300 preschoolers (Mage = 44.70 months), bifactor models where variance were parsed into a co-occurring/general factor (i.e., bullying-victimization) and specific/pure factors (e.g., bullying) provided a good fit to the data using teacher/observer reports at two independent time points. Factor scores were saved and used in nested path analyses with a subset of the 81 participants with available physiological data. HAB predicted increases in the general factor, thought to represent co-occurring bullying/victimization, at high and average (β 's = .21 -.44, p 's = .007 - .008), but not low ($\beta = .01, p = .65$), levels of SCL-R. These results highlight the potential of bifactor models for examining dimensional experiences of relational bullying/victimization and provide initial evidence of HAB as a risk factor specifically for co-occurring relational bullying/victimization for those with average to high levels of sympathetic nervous system stress reactivity.

Anna T. Pham, Department of National Defence; Sandy Jung, MacEwan University; Martina Faitakis, Saint Mary's University; Adam Morrill, MacEwan University

Title: Comparison of reactive and proactive intimate partner violent men

From early work with animals to more recent studies using humans, aggressive behavior has been reliably classified into two distinct subtypes: (1) an emotionally charged, uncontrolled aggressive act in response to a perceived provocation (i.e., reactive) and (2) a planned, controlled, unemotional, and goal-oriented aggressive act (i.e., proactive). Recent studies in the intimate partner violence (IPV) literature have provided empirical support for this bimodal classification of aggression consistent with the general aggression literature, in which these subtypes differ on individual characteristics, psychopathology, and the nature and severity of their partner-violent behavior. The aim of this study is to examine whether reactive and proactive IPV offenders differed on variables potentially relevant for offender management and

intervention, including their offense-related characteristics, scores on IPV risk measures, and observed recidivism. The sample consisted of 494 (370 reactive and 124 proactive) men who committed at least one violent offence against their female intimate partner, and were followed for an average of 3.68 years. Results indicated that proactive IPV offenders had significantly more collateral victims at the index and engaged in significantly more stalking behaviors compared to their reactive counterparts. Conversely, reactive offenders were more likely to have consumed alcohol at their index offenses. In addition, we found that proactive offenders had significantly higher scores on two IPV risk measures ($d = 0.45$ and 0.64) and were more likely to recidivate. Consideration of the criminogenic characteristics of individual IPV offenders through the lenses of bimodal classification and IPV typology will be discussed.

Travis N. Ray, Oakland University; Allen M. Omoto, Claremont Graduate University

Title: Precarious manhood and aggression in the military

Precarious manhood theory (PMT) suggests that masculinity is fragile and can be lost at any time. Consequently, men feel the need to engage in stereotypically masculine behaviors to socially “prove” their masculinity. Hypermasculine environments, such as the military, may be rife with manhood threats. Male service members who are perceived as feminine may experience manhood threats through both interpersonal victimization and gender-related reprimands. Consistent with the PMT tenets, manhood threats may heighten anxiety and result in aggression. The current study tested these associations using a path analysis. Male service members ($N = 497$) completed online assessments of perceptions of femininity, interpersonal victimization, gender-related reprimands, anxiety, and aggression. As predicted, perceptions of femininity were associated with interpersonal victimization ($\beta = .15, p < .01$) and gender-related reprimands ($\beta = .29, p < .001$). In turn, interpersonal victimization ($\beta = .37, p < .001$) and gender-related reprimands ($\beta = .11, p < .05$) were associated with anxiety, and anxiety was associated with aggression ($\beta = .21, p < .001$). Additional analyses indicated that anxiety fully mediated the effect of gender-related reprimands on aggression, and partially mediated the interpersonal victimization-aggression link. Meanwhile, perceptions of femininity retained a direct relationship with aggression ($\beta = .12, p < .01$). These results support PMT and suggest that it may provide a useful framework for understanding aggression by male service members. Further research is needed to replicate these findings and explore other factors that contribute to aggressive behavior by military personnel.

Elizabeth Summerell, University of New South Wales; Cindy Harmon-Jones, University of New South Wales; Thomas F. Denson, University of New South Wales; Eddie Harmon-Jones, University of New South Wales

Title: State humility reduces motivation to aggress

Experiences of anger are frequent, and people report feeling angry anywhere from several times per week to several times per day (Berkowitz & Harmon-Jones, 2004). Despite this, effective, evidence-based methods for the reduction of anger and aggression are limited. We propose one effective method for reducing anger and aggression involves the increase of discrete emotions that have response tendencies that oppose anger and aggression. One such emotion is humility.

In three studies, we tested the prediction that humility would be associated with less anger and aggressive motivation. Study 1 confirmed that individual differences in humility were significantly inversely associated with individual differences in anger and aggression. Increased humility predicted less anger and aggression independent of narcissism and other major personality traits derived from the HEXACO model. Studies 2 and 3 found that experimentally induced humility significantly reduced motivation to aggress. These results suggest that humility may reduce the approach motivational urges associated with experiences of anger (i.e., aggressive urges).

Elizabeth Summerell, University of New South Wales; Liberty Shuttleworth; Carmen Lin, Thomas F. Denson, University of New South Wales

Title: The effects of race, gender, and alcohol cues on anger perception in crowds

Seemingly peaceful crowds can quickly and unpredictably turn violent. It is therefore crucial that observers can accurately perceive crowds' emotions to respond and de-escalate tensions effectively. Recent research suggests individuals tend to overestimate the average intensity of a crowd's emotion, known as the crowd emotion amplification effect. Here we examine the influence of race, gender, and alcohol cues on this effect. In Study 1, we replicated the emotion amplification effect, and found that participants overestimated the anger intensity of male faces more than female faces. In Study 2, we replicated the effects of size and gender observed in Study 1, and found that participants overestimated the anger intensity of trials preceded by an alcohol cue more than trials preceded by placebo cues. We also found that participants overestimated anger of trials with White faces to a greater extent than trials with African American faces. In Study 3, the crowd emotion amplification effect was reversed. Participants overestimated anger on trials containing one face to a greater extent than trials containing 12 faces. Despite this, follow-up analyses indicated the pattern of overestimation was the same as in the previous studies. That is, when only one face was presented African Americans were perceived as angrier than Whites, however, when 12 faces were presented Whites were perceived as angrier than African Americans. These findings expand our understanding of factors that influence the crowd emotion amplification effect and have important implications for crowd management and policing strategies.