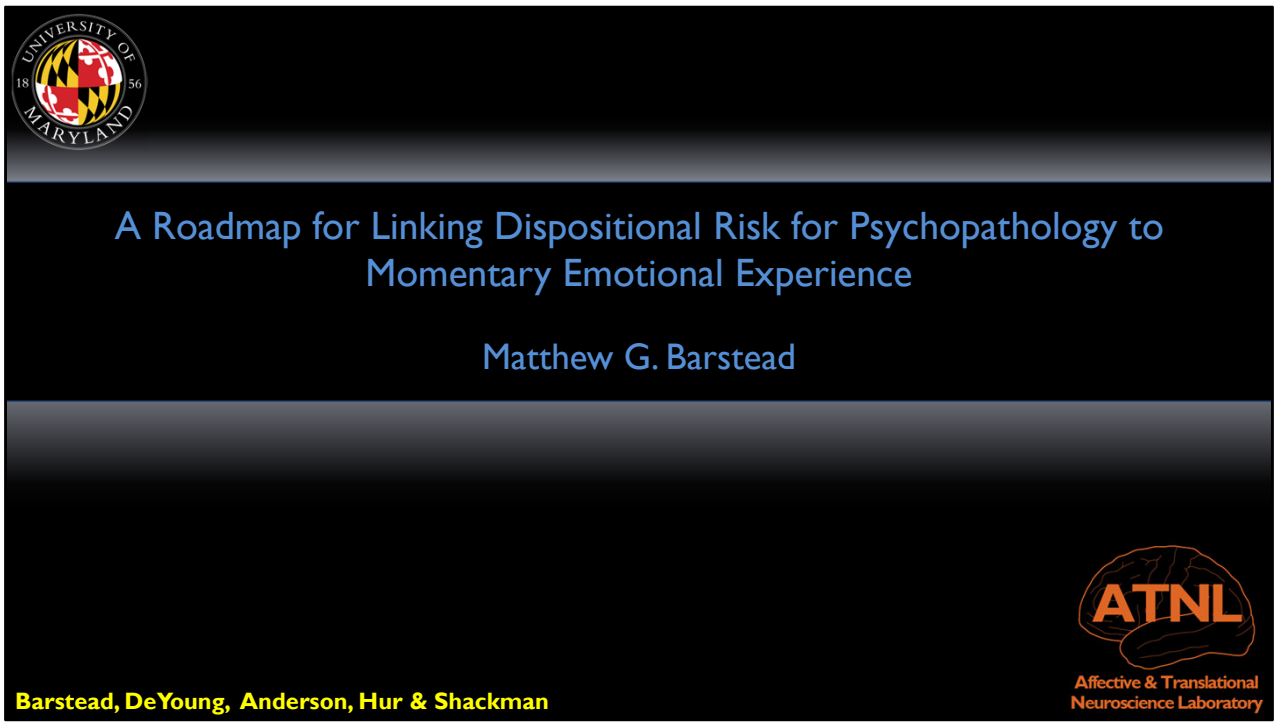
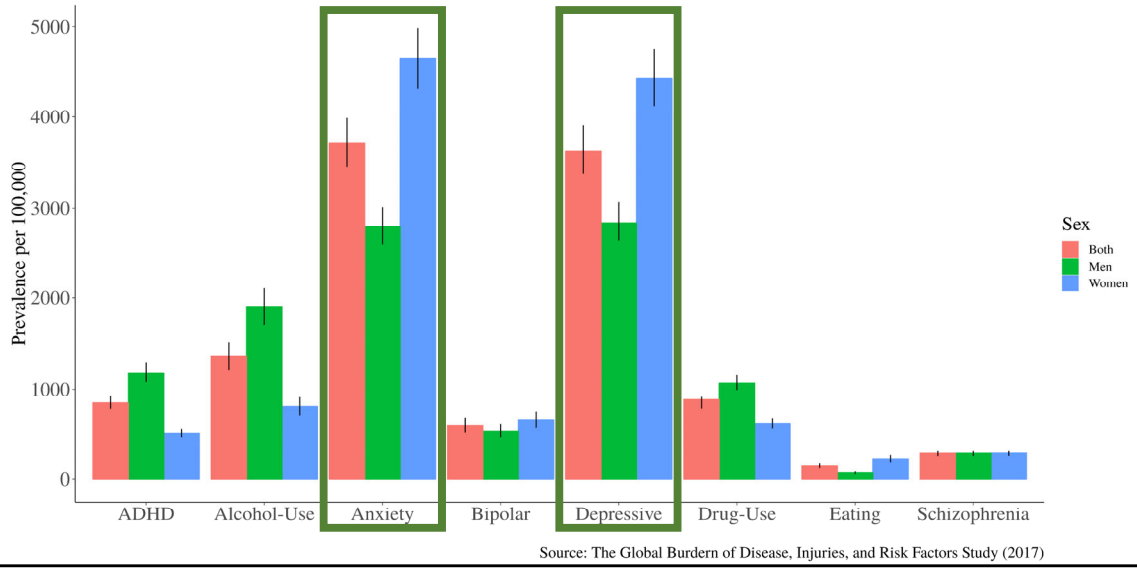


Hi! I'm Matt Barstead, and I am delighted to have this opportunity to share some of our recent work focused on how individual risk for the development of psychopathology manifests in people's daily lives.

Global Prevalence of Internalizing Disorders



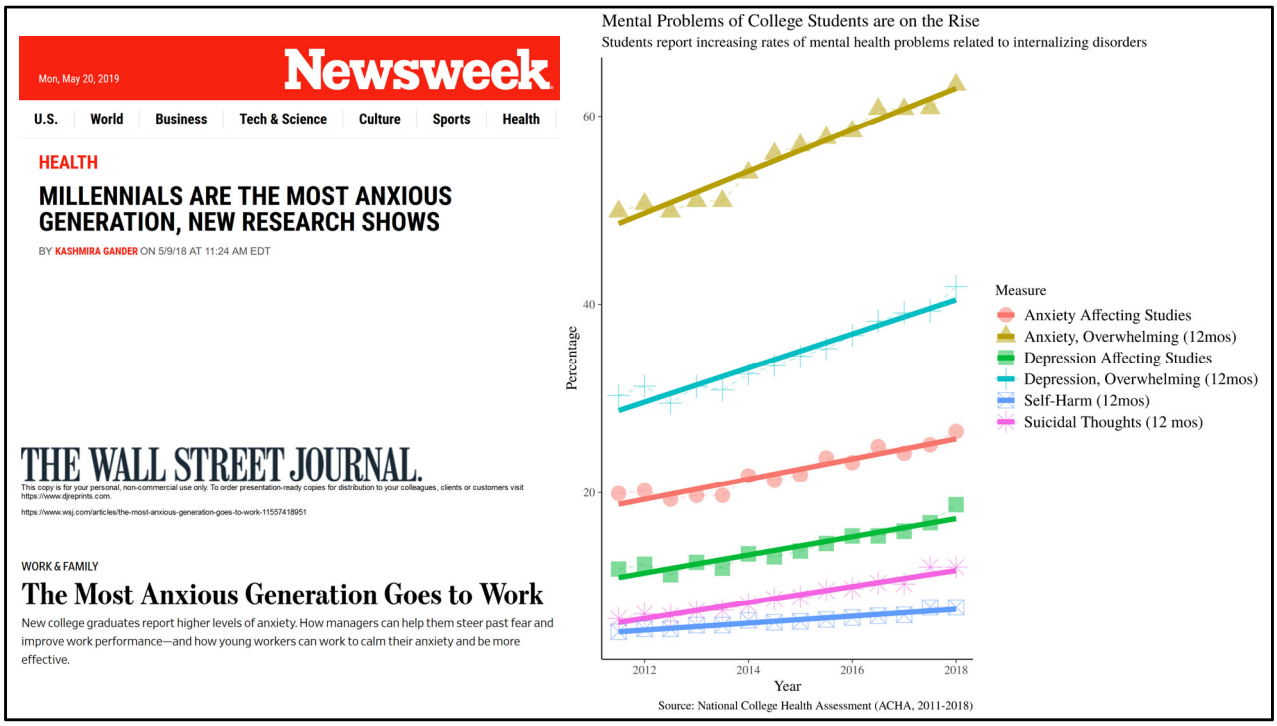
Source: The Global Burdern of Disease, Injuries, and Risk Factors Study (2017)

To understand the relevance of our work we need to begin by recognizing that, among mental health disorders, anxiety and depression are the most prevalent globally.

Based in part on high prevalence rate, anxiety and depression also rank highly in terms of societal burden as seen here when plotting global estimates of disability-adjusted life years attributable to each family of disorders. We can also put a dollar figure on that cost. One 2010 estimate had the combined direct and indirect costs of mental illness at approximately $2.5 trillion dollars, with a third of that amount attributable to depression alone.

For some reference, $2.5 trillion is about the same amount as the United Kingdom's GDP in 2016.

$2.5 trillion dollars is also the approximate valuation of Facebook, Amazon, and Apple combined.



Clinical levels of anxiety and depression tend to emerge during the first three decades of life, and recent indications point to a generation that is experiencing elevated symptoms and earlier onsets of mood disorders.

A national survey of U.S. college students clearly shows that, at least since 2011, endorsements of more severe internalizing symptoms such as feeling overwhelming anxiety, suicidal ideation, and depression have been on the rise.

Combined these unfortunate epidemiological data highlight the importance of ongoing efforts to properly define the features and processes that contribute to the development of a mental health disorder.

Dispositional Negativity

- The tendency to experience more intense, frequent, and/or persistent negative emotions
- Detectable early in life
- Heritable
- Psychometric structure relatively invariant across cultures
- Analogous phenotypes observable in other mammals

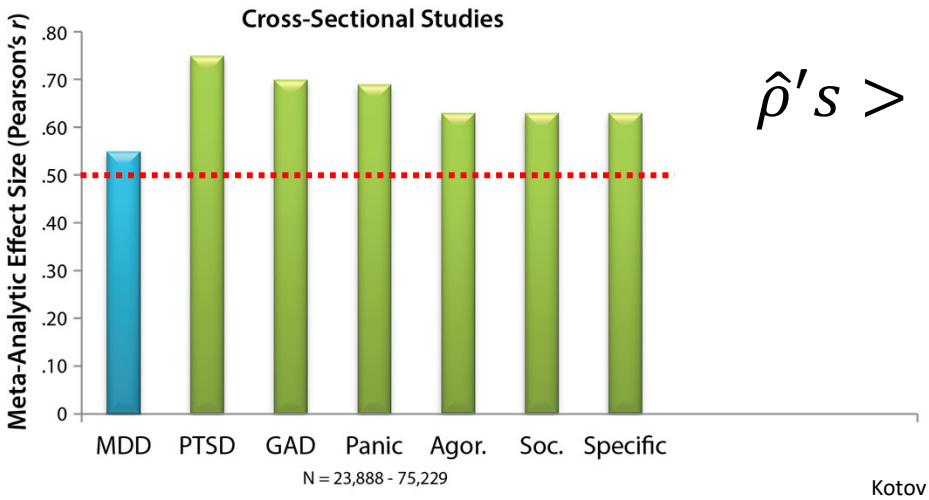
Brandes et al., in press; Hur et al., in press ; Shackman et al. 2016; Tackett & Lahey, 2017

In our work we have focused mainly on dispositonal negativity as our primary risk factor of interest.

Often termed “neuroticism” or “negative emotionality,” dispositional negativity is the tendency to experience more intense, frequent and/or persistent negative emotions such as sadness, worry, and irritability.

Importantly, trait-like variation in this risk factor for mood disorders is detectable early in life, is heritable, and can be measured reliably with instruments exhibiting a psychometric structure that is relatively invariant across cultures. What’s more, is that we can observe analogous phenotypes in other mammals.

Dispositional Negativity & Concurrent Psychopathology

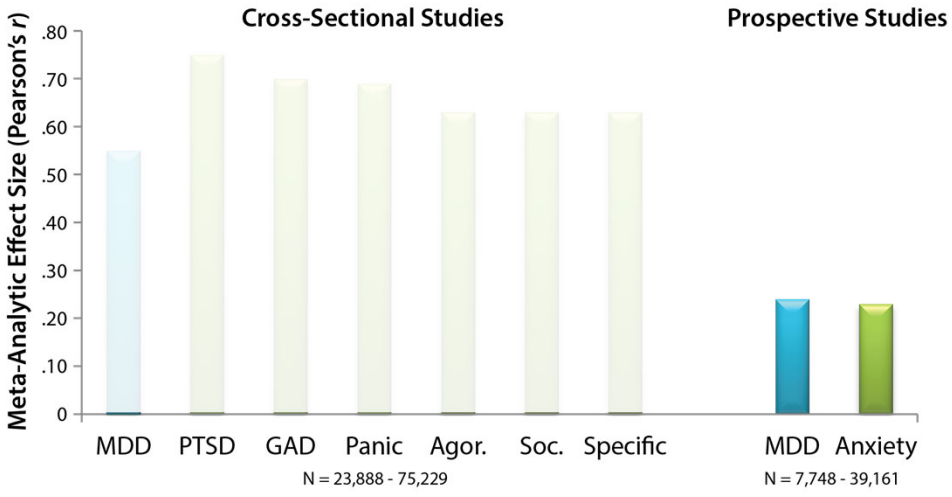


$\hat{\rho}'s > .50$

Kotov et al. 2010; Jeronimus et al. 2016

Dispositional negativity shares robust associations with anxiety and depressive disorders, both concurrently

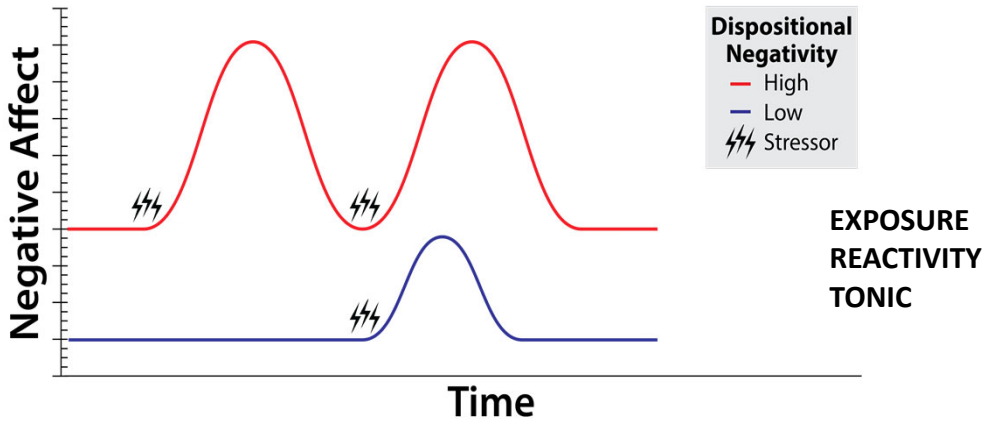
Dispositional Negativity and Future Psychopathology



And, prospectively, the latter being a key pre-condition for causation

Dispositional Negativity and Mood

- What does dispositional negativity look like in daily emotional life?



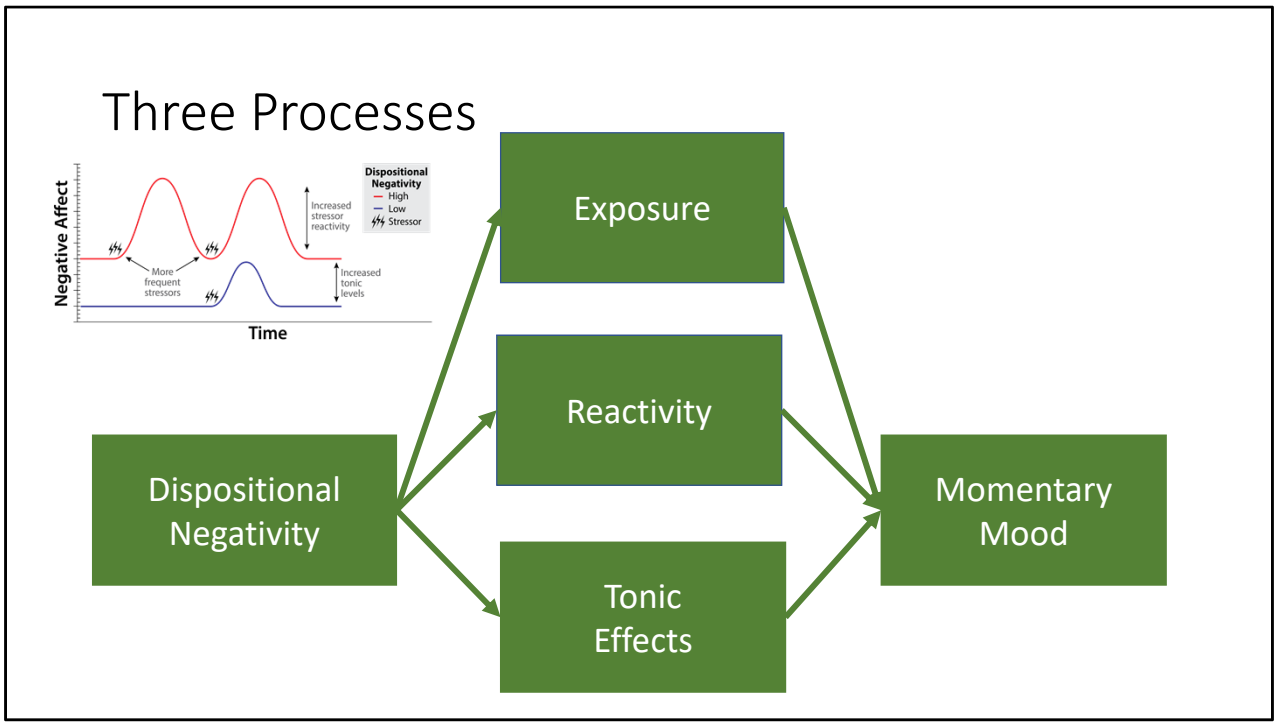
Shackman et al. 2016

4 decades of survey and psychophysiological research motivate the hypothesis that 3 pathways explain the heightened negative affect and elevated risk for mood disorders that characterizes individuals with a more negative disposition

First: Individuals with a negative disposition experience more frequent hassles, conflicts, and negative life events, which in turn are thought to promote negative mood

Second: When they do encounter acute stressors, dispositionally negative individuals often report exaggerated levels of negative affect

Third: Dispositionally negative individuals often experience elevated levels of negative affect in relaxed and familiar settings, when stressors are remote, diffuse, or uncertain—an effect that's been described as a 'direct,' 'endogenous', or tonic effect of dispositional negativity, given the absence of acute stressors.



Understanding the pathways linking dispositional negativity to momentary affect is conceptually and practically important. Consider interventions aimed at reducing the undesirable consequences of dispositional negativity. What should they target?

1. Should they encourage at-risk individuals to avoid stressors (or avoid inadvertently generating them)?
2. Should we be teaching people high in trait negativity to react less and be more mindful?
3. Should interventions cultivate context-independent skills for enhancing and repairing maladaptive mood (e.g., exercise)?

4. What about positive events and positive affect?

Without knowing the relative importance of exposure, reactivity, and tonic effects, it is impossible to address these questions and difficult to discern the optimal paradigms to employ in experimental, biological, and intervention studies

Previous Efforts

Personality and the Problems of Everyday Life: The Role of Neuroticism in Exposure and Reactivity to Daily Stressors

Niall Bolger
University of Denver

Elizabeth A. Schilling
University of Michigan

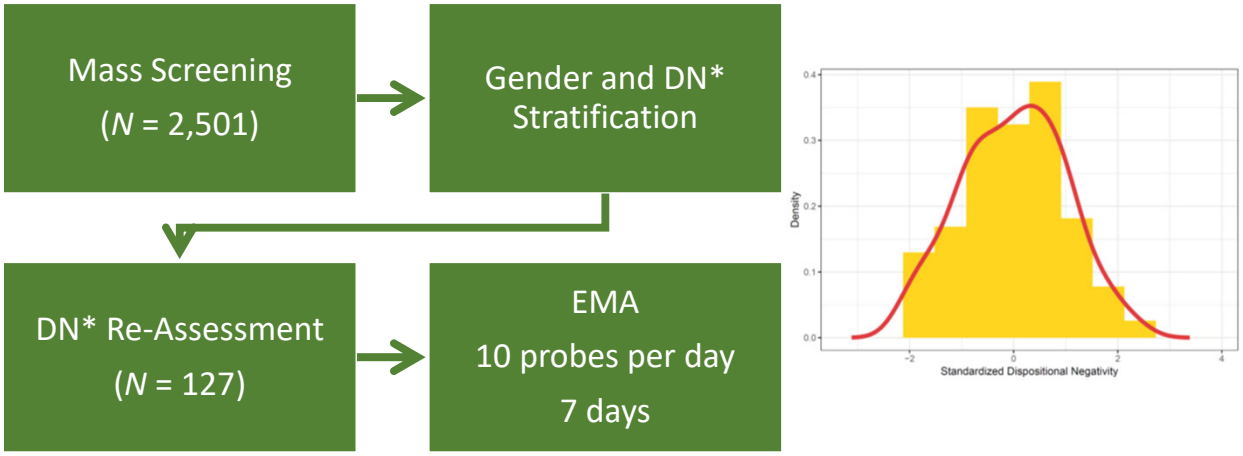
Journal of Personality 59:3, September 1991.

1. TONIC EFFECTS
2. REACTIVITY EFFECTS
3. EXPOSURE

The one study we are aware of that has attempted to separately assess the relative contributions of these three pathways was published in the Journal of Personality almost 30 years ago. The population sampled was middle-aged couples in the Detroit region and the researchers utilized a daily diary approach to collect data on daily stressors and affect.

They found that tonic effects accounted for the largest portion of the association between neuroticism and daily mood, followed by reactivity, and then exposure. Despite three decades of work, we have collectively made limited progress in extending these results to different populations, developmental periods, or experience sampling methodologies.

Study 1 – Overview



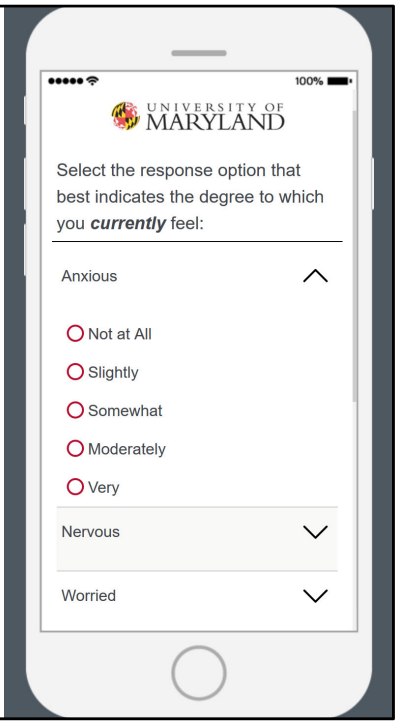
* BFI-N and IPIP Trait Anxiety; αs > .85; 4-month retest, *r* = .92

Adopting a similar conceptual framework for making comparisons about the relative contribution of each of these three processes, we recruited a sample of university students, stratifying our recruitment efforts by gender and dispositional negativity scores obtained in a mass screening.

Prior to the start of the experience sampling portion of the study, participants came to the lab and re-completed our measure of dispositional negativity (18 items from the BFI-N and IPIP Trait Anxiety scales). To minimize the influence of occasion-specific variation in DN responses, we aggregated scores across the 2 assessments
Our stratified approached yielded a final sample with a reasonable and mostly symmetric coverage of the DN spectrum from -2 SD to a little over +2 SD.

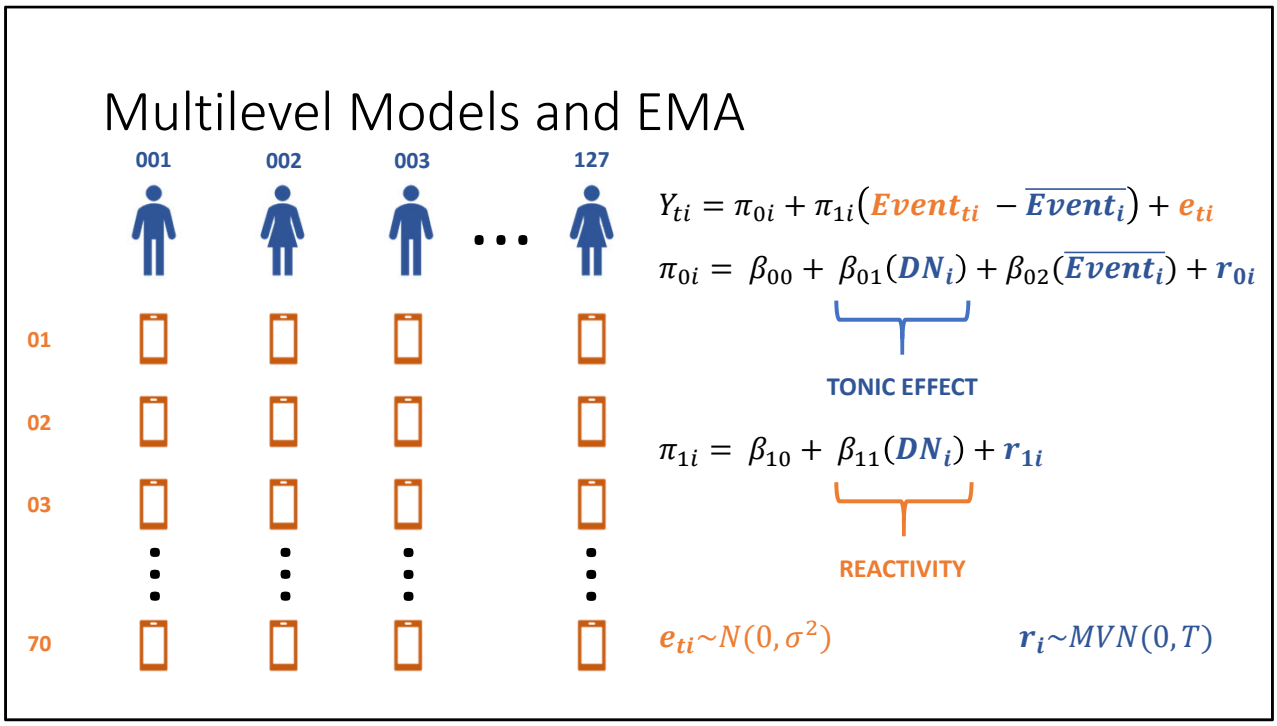
Measures

- Negative Mood
  - *Anxious, Nervous, Worried*
- Positive Mood
  - *Cheerful, Happy, Joyful*
- Intensity of Recent Events
  - Rate the ***worst*** [best] thing that happened to you ***in the past hour***?



Briefly, when I say ecological momentary assessment, what I mean is that our participants received text messages with embedded links that directed them to an online questionnaire that they could complete in the moment. These texts were delivered at pseudo-random times throughout the day.

Using these quick probes, participants described their current negative and positive moods. We also asked them to rate the intensity of recent negative and positive events.



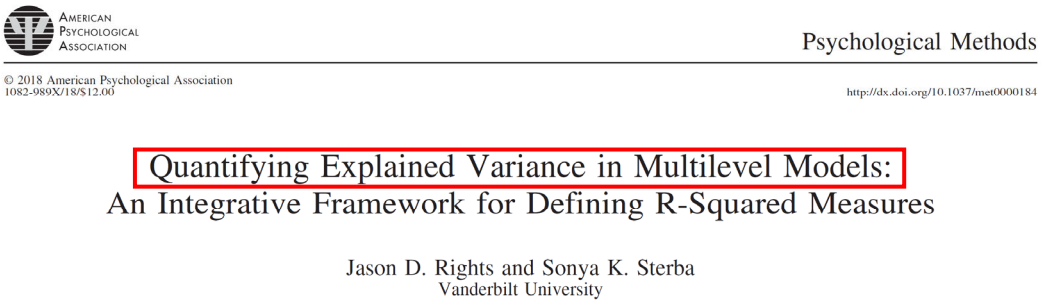
Mulilevel models are often applied to experience sampling techniques.

Multilevel models have several useful properties, the most important of which in our case is the partitioning of variance into between- and within-subjects sources of variation. In our data, with multiple assessments nested within each participant, we have at least two sources of variability. The first source includes features of the individual such as gender, age, major, or our focal predictor, dispositional negativity scores.

The second source of variability involves features that are specific to the context surrounding timing of the prompt. These features drive within-subject variability and are of interest in terms of modeling individual differences in reactivity.

On the right here is one of several ways to notate these models, and, using this framework, we can see how at least two of our effects of interest (the tonic association between DN and momentary mood, and within-subject reactivity to recent negative or positive events) can be evaluated in this single, cross-level model.

Variance Decomposition



American Psychological Association

Psychological Methods

1082-989X/18/$12.00

http://dx.doi.org/10.1037/met0000184

Quantifying Explained Variance in Multilevel Models:
An Integrative Framework for Defining R-Squared Measures

Jason D. Rights and Sonya K. Sterba
Vanderbilt University

But model coefficients often only tell part of the story, and while a detection of a credible effect is important, focusing solely on whether a parameter is likely different from 0 can limit our understanding of the phenomena we study. As a result, we made the effort to define the variance in out momentary mood measures attributable to our three proposed processes.

Our analytic approach was inspired by recent work by Rights and Sterba, which allowed us to isolatethe variance in momentary mood at different levels of our multilevel models. I would encourage anyone interested in adopting or adapting our modeling strategy to review this article.

Variance Decomposition

$$var(\widehat{Y_{ti}}) = \beta^{w\prime}\Phi^{w}\beta^{w} + \beta^{b\prime}\Phi^{b}\beta^{b} + tr(T\Sigma) + \tau_{00} + \sigma^{2}$$

$$Y_{ti} = \pi_{0i} + \pi_{1i}(\boldsymbol{Event_{ti}} - \overline{\boldsymbol{Event_i}}) + \boldsymbol{e_{ti}}$$

$$\pi_{0i} = \beta_{00} + \beta_{01}(\boldsymbol{DN_i}) + \beta_{02}(\overline{\boldsymbol{Event_i}}) + \boldsymbol{r_0}$$

$$\pi_{1i} = \beta_{10} + \beta_{11}(\boldsymbol{DN_i}) + \boldsymbol{r_{1i}}$$

$$\boldsymbol{e_{ti}} \sim N(0, \sigma^2)$$

$$\boldsymbol{r_i} \sim MVN(0, T)$$

$$\boldsymbol{Within\ Variance} = \beta^{w\prime}\Phi^{w}\beta^{w} + tr(T\Sigma) + \sigma^{2}$$

$$\boldsymbol{Between\ Variance} = \beta^{b\prime}\Phi^{b}\beta^{b} + \tau_{00}$$

Adapted from Rights & Sterba (2018)

Not presented in the talk – but here are the variance terms that map up on to the multilevel model (and that can be calculated for multiple forms of the model that vary in the predictors & terms added/removed).

Isolating Variance – Multiple Models

Restricted Model:

$$Y_{ti} = \pi_{0i} + \pi_{1i}(\boldsymbol{Event_{ti}} - \overline{\boldsymbol{Event_i}}) + \boldsymbol{e_{ti}}$$

$$\pi_{0i} = \beta_{00} + \beta_{01}(\boldsymbol{DN_i}) + \boldsymbol{r_{0i}}$$

$$\pi_{1i} = \beta_{10} + \boldsymbol{r_{1i}}$$

Full Model:

$$Y_{ti} = \pi_{0i} + \pi_{1i}(\boldsymbol{Event_{ti}} - \overline{\boldsymbol{Event_i}}) + \boldsymbol{e_{ti}}$$

$$\pi_{0i} = \beta_{00} + \beta_{01}(\boldsymbol{DN_i}) + \beta_{02}(\overline{\boldsymbol{Event_i}}) + \boldsymbol{r_{0i}}$$

$$\pi_{1i} = \beta_{10} + \boldsymbol{r_{1i}}$$

$$\Delta R^2_{btw} = R^2_{F,\,btw} - R^2_{R,\,btw}$$

Not presented in talk -

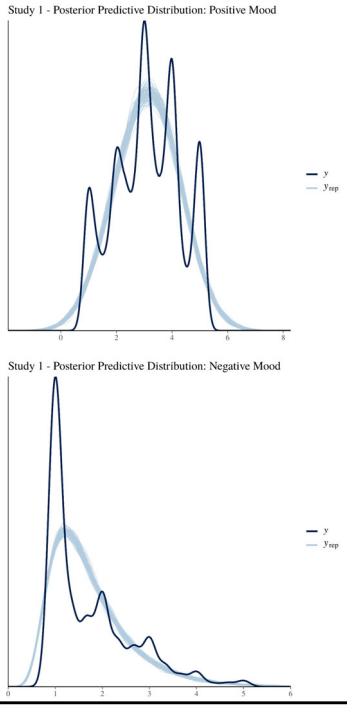
So how did this modeling approach work in practice? Very similarly to the calculation of R2-change statistics in the more familiar family of linear regression models.

Now, isolating specific variance terms is a little more involved in multilevel models and for our specific use case required multiple models and the calculation of R2 difference scores.

We anticipated that analyses of negative affect and negative events would reveal evidence of all three pathways. In comparison, the empirical record for positive events and positive affect is scant and we considered those analyses to be largely exploratory."

Data Analysis

- Bayesian MLMs using *brms* in R (Bürkner, 2017)
- Modeled positive mood/positive events as well as negative mood/negative events
- Weakly informative **normal** priors for positive mood
- Weakly informative **log-normal** priors for negative mood
- Multilevel imputation to address missingness (m = 20)



MLModeling was accomplished using the Bayesian approach, which provides a convenient way of estimating the uncertainty of parameter estimates like the model-implied variance terms we created to map onto our exposure, reactivity, and tonic effects of interest.

Importantly we included measures of negative events and negative mood as well as positive events and positive mood. We had originally expected to find support for all three pathways linking dispositonal negativity to momentary mood when examining negative events/and negative affect. Given the limited empirical record to positive mood and positive events, we viewed these models as more exploratory and hypothesis-generating in nature.

Based on exploratory analyses normal priors seemed reasonable for our measure of positive mood. The skew of our negative mood model motivated the use of a log-normal prior for our outcome.

Missingness was addressed using a multilevel imputation model led to the creation of 20 data sets.

S1 – Negative Mood, Negative Events

Effect	Estimate	LB	UB
Intercept, π_{0i}			
Intercept, β_{00}	***0.346***	***0.269***	***0.433***
Tonic DN, β_{01}	***0.110***	***0.063***	***0.157***
Exposure, β_{02}	***0.569***	***0.260***	***0.882***
Negative Event, π_{1i}			
Intercept, β_{10}	***0.192***	***0.161***	***0.223***
Reactivity DN, β_{11}	0.016	-0.014	0.046

TONIC

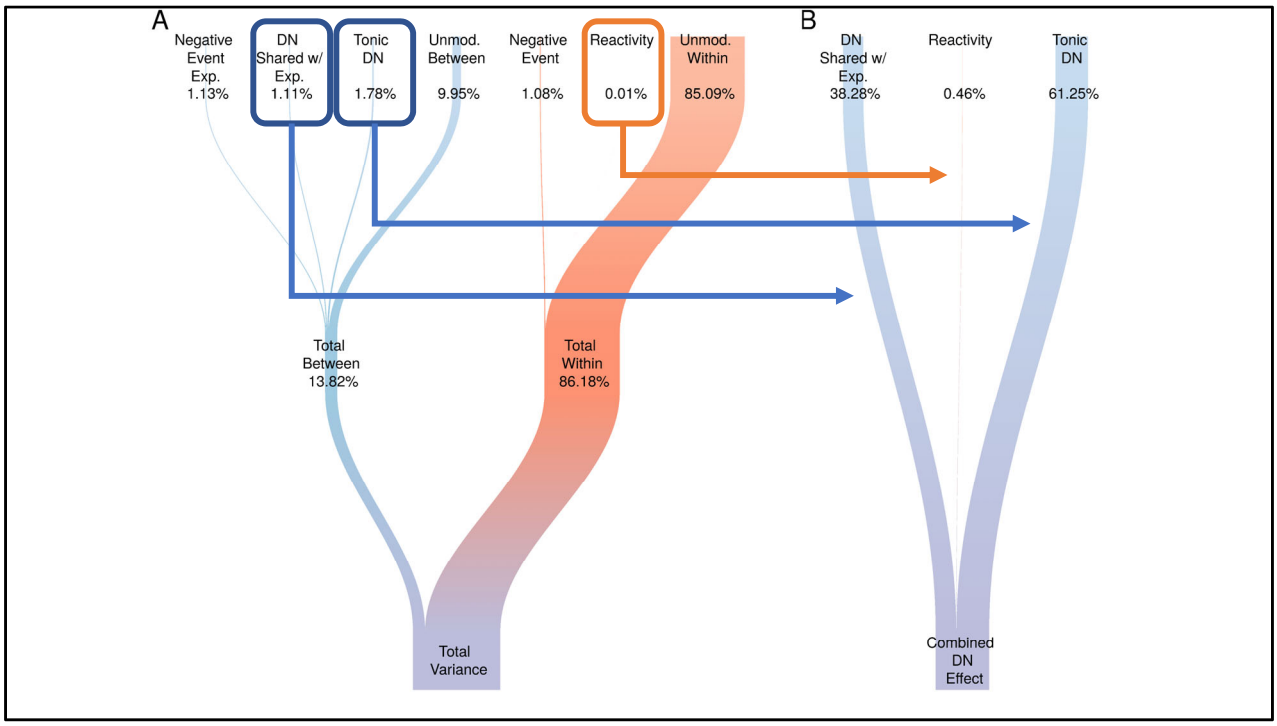
EXPOSURE

REACTIVITY

Beginning with negative events and negative mood, we found that individual differences in exposure to negative events was associated with average levels of negative affect, with exposure being the relative frequency of reporting a recent negative event.

Opposite expectations dispositional negativity was not credibly related to greater negative affective reactivity in the wake of a recent negative event.

We did find that, as expected, dispositional negativity was related to elevated levels of negative affect overall.



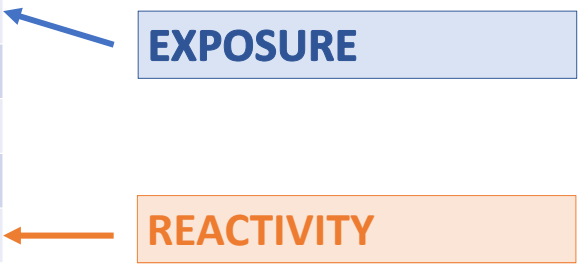
Walking through the complete variance decomposition of these effects, we first see that there was much more within-subjects variation in negative affect than between-subjects variation.

We can trace the sources of variation further up each branch and even break out the effects of interest to more directly compare their relative contributions to momentary affect.

In doing so we see that the tonic effects of dispositional negativity account for more the 60% of the dispositional negativity's association with negative affect, which is almost twice the size of the contribution of dispositional negativity via differential exposure to negative events. We also see that reactivity contributes very little to the link between trait negativity and negative affect.

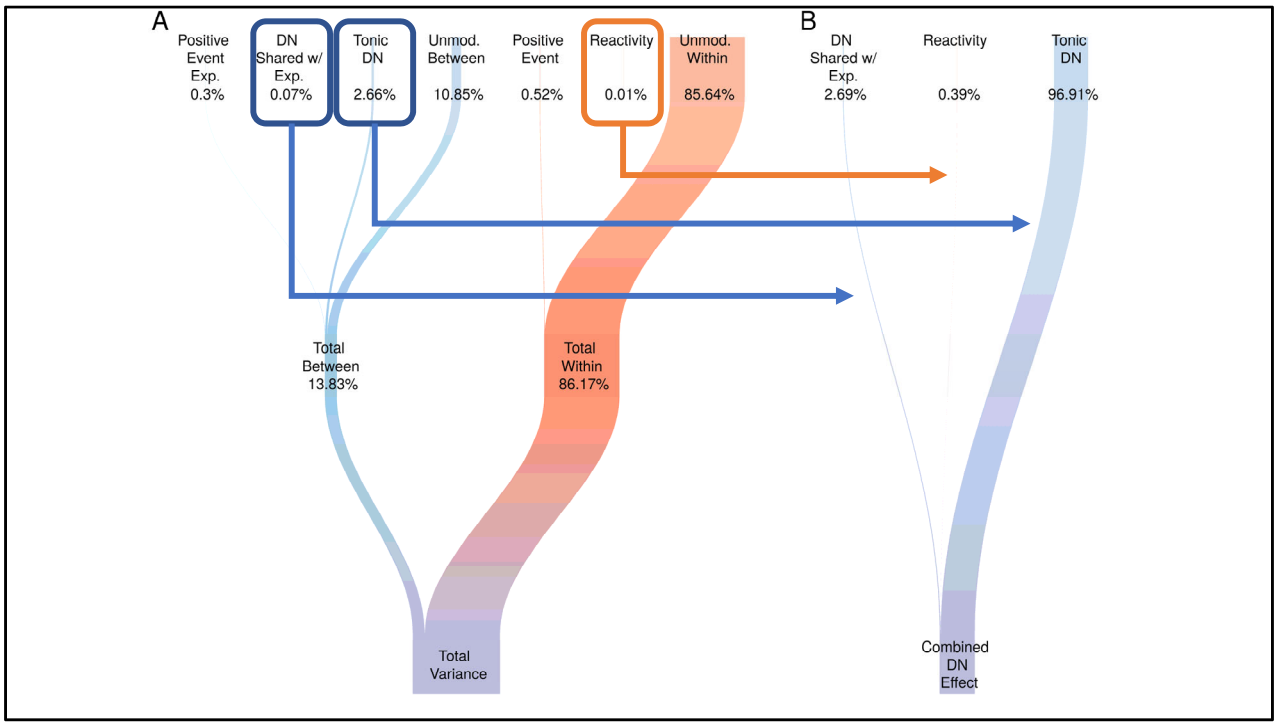
S1 – Negative Mood, Positive Events

Effect	Estimate	LB	UB
Intercept, π_{0i}			
Intercept, β_{00}	***0.552***	***0.445***	***0.662***
Tonic DN, β_{01}	***0.136***	***0.089***	***0.182***
Exposure, β_{02}	-0.167	-0.350	0.015
Positive Event, π_{1i}			
Intercept, β_{10}	***-0.092***	***-0.117***	***-0.068***
Reactivity DN, β_{11}	***-0.029***	***-0.054***	***-0.003***



When we look at exposure to positive events and reactivity to recent positive events in our models of momentary negative affect we see that exposure to positive events is unrelated to average negative affect. We also found that our measure of trait negativity was related to enhanced reactivity to positive events, but in all honesty the effect was opposite our expectations. We had initially expected a blunting of the emotional benefits transferred from recent positive events among individuals higher in trait negativity.

Instead, our models suggest enhanced emotional benefits with dispositional negativity predicting even lower levels of negative affect in following a recent positive event.

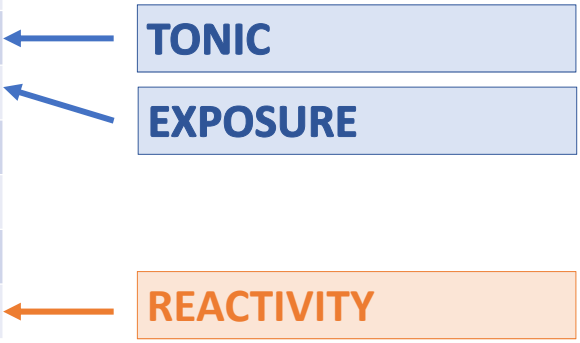


Turning again to the complete decomposition of these effects, we see that despite detecting a credible reactivity effect in our model, the amount of variance in momentary negative affect attributable to this reactivity effect was negligible.

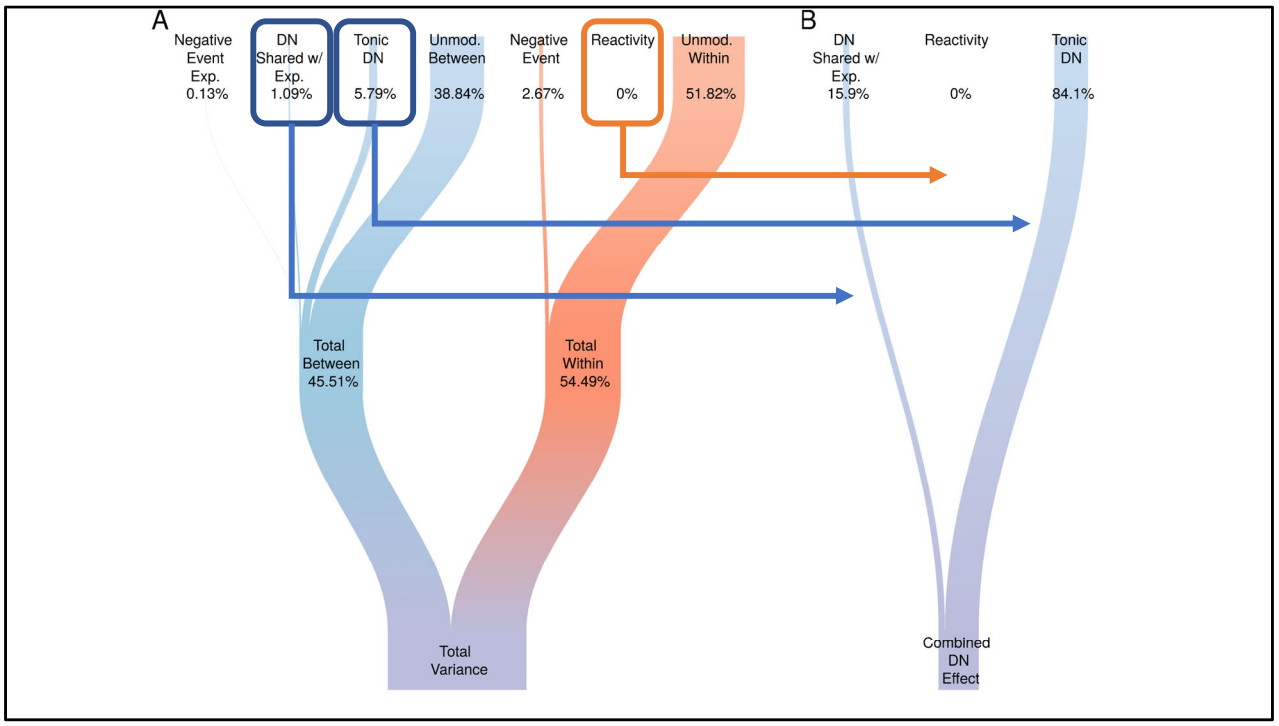
Focusing just on the effects that involve dispositional negativity, we see even clearer evidence in these positive event models that the tonic effect of dispositional negativity accounts for the largest amount of variance in momentary negative affect.

S1 – Positive Mood, Negative Events

Effect	Estimate	LB	UB
Intercept, π_{0i}			
Intercept, β_{00}	***3.13***	***2.90***	***3.36***
Tonic DN, β_{01}	***-0.30***	***-0.44***	***-0.38***
Exposure, β_{02}	-0.17	-1.11	0.75
Negative Event, π_{1i}			
Intercept, β_{10}	***-0.45***	***-0.53***	***-0.38***
Reactivity DN, β_{11}	-0.02	-0.09	0.06



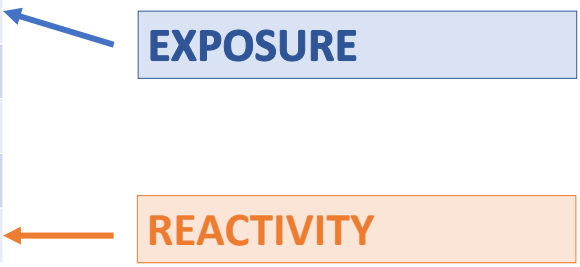
Applying the same modeling and variance decomposition approach to positive mood, we found that differential exposure to negative events was unrelated to variation in average levels of positive mood. We also failed to find evidence of enhanced reactivity to recent negative events associated with dispositional negativity. Dispositional negativity was, however associated with lower levels of positive affect on average.



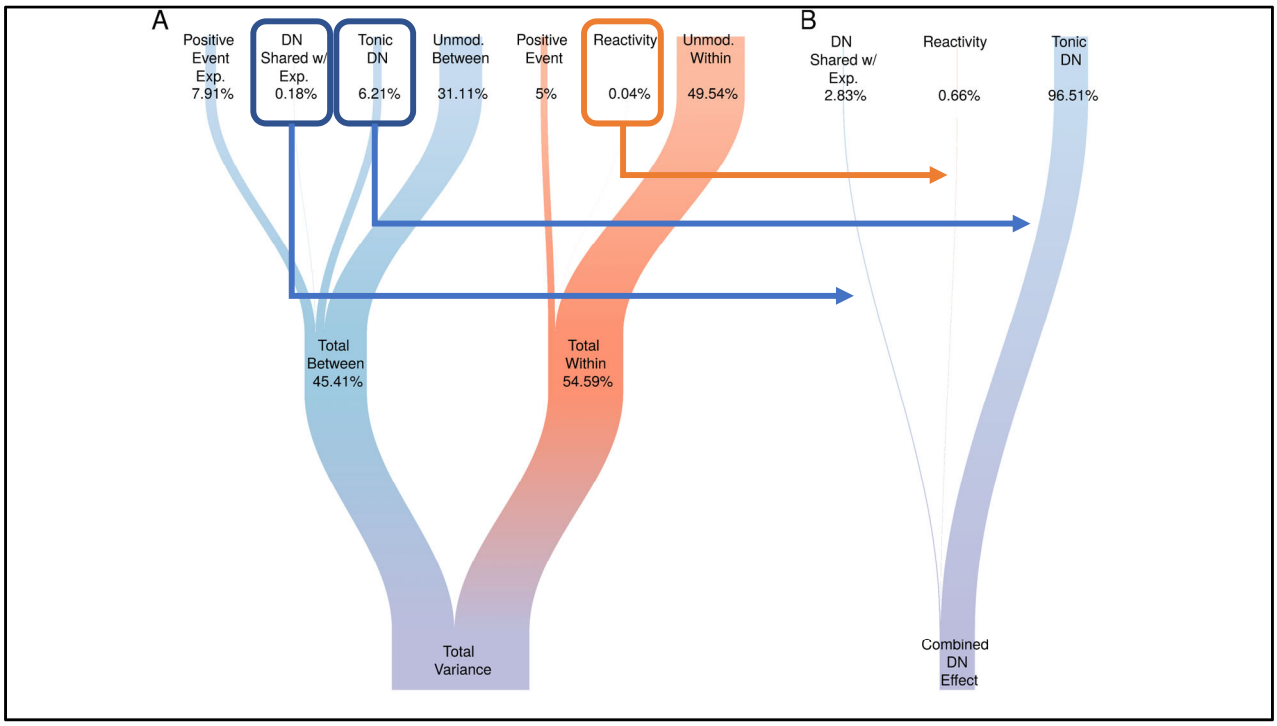
Our variance decomposition efforts revealed a familiar pattern with the lion's share of the association between dispositional negativity and momentary positive affect attributable to the tonic effects of dispositional negativity.

S1 – Positive Mood, Positive Events

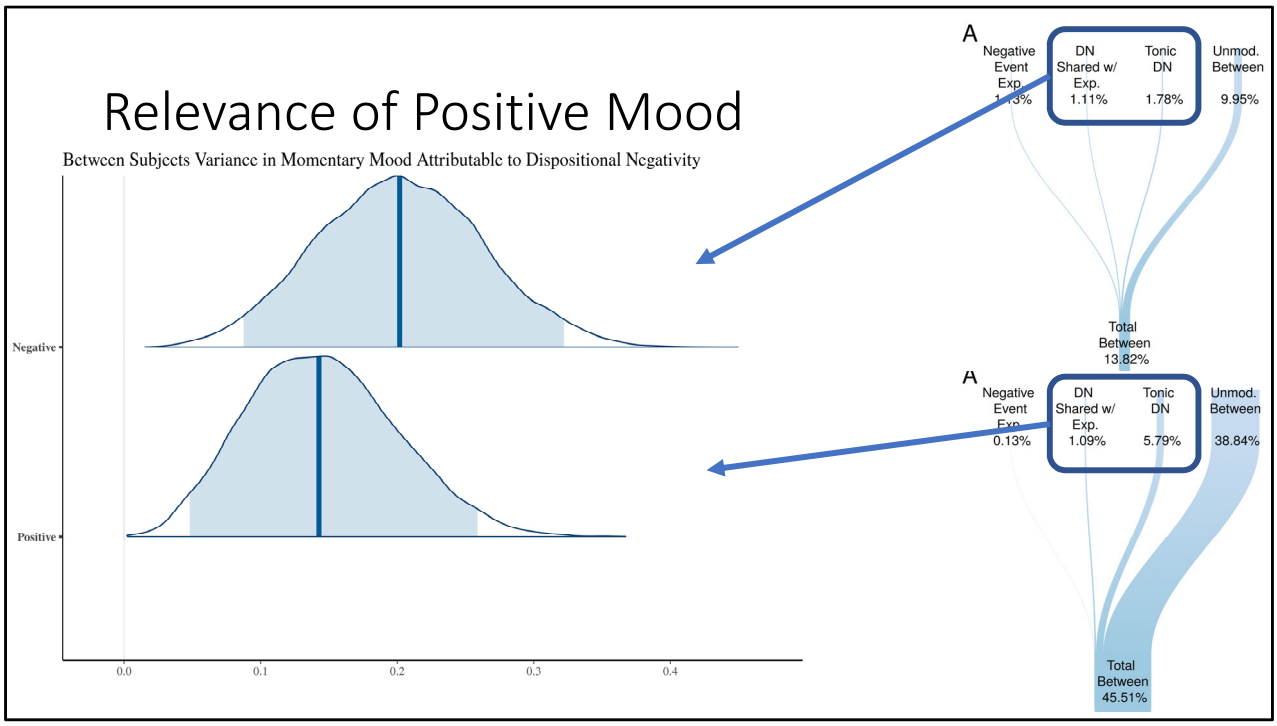
Effect	Estimate	LB	UB
Intercept, π_{0i}			
Intercept, β_{00}	***2.35***	***2.07***	***2.64***
Tonic DN, β_{01}	***-0.32***	***-0.44***	***-0.20***
Exposure, β_{02}	***1.38***	***0.90***	***1.86***
Positive Event, π_{1i}			
Intercept, β_{10}	***0.58***	***0.51***	***0.64***
Reactivity DN, β_{11}	***0.09***	***0.02***	***0.15***



Finally, we found that exposure to positive events was associated with elevated levels of positive affect in general. We also found that dispositional negativity was again related to increased reactivity to positive events – again in a direction consistent with mood brightening.



As with our previous models, we again find the familiar pattern that most of the variance in momentary positive affect attributable to dispositional negativity is related to tonic or endogenous effects.



Drilling down into the variance explained in positive and negative mood, we can see that in an absolute sense, dispositional negativity actually accounts for more variance in momentary positive affect than momentary negative affect.

When looking just at just the amount of between-subjects variance in mood, dispositional negativity accounts for slightly more variability in momentary negative affect than positive affect. The point is that there is ample reason to think that no matter how you look at these data we should care about negative and positive mood as well as negative and positive events if we hope to gain a clearer picture of how a risk factor for psychopathology influences individuals' daily mood.

Study 1 Summary

Negative Mood

- Stable pattern for DN → Mood
  - Tonic > Exposure > Reactivity ✓✓
- Evidence of enhanced Reactivity
  - ~~To negative events~~
  - To positive events ✓✓

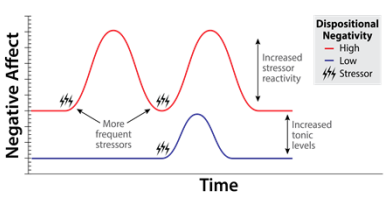
Positive Mood

- Stable pattern for DN → Mood
  - Tonic > Exposure > Reactivity ✓✓
- Evidence of enhanced Reactivity
  - ~~To negative events~~
  - To positive events ✓✓

To briefly summarize then, we found that the tonic effects of dispositional negativity accounted for the largest amount of variance in momentary mood, followed by differential exposure, and then reactivity.

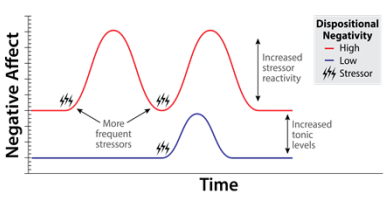
Reactivity effects tended to be very small in our models, and when they did occur they were in response positive events. What's more is that these effects suggested individuals with a more negative disposition derived larger emotional benefits from positive events.

Study 1 Summary



To remind you all of the thinking that informed our approach, we started off by trying to evaluate the relative contributions of differential exposure to negative and positive events, emotional reactivity, and the tonic effects of DN to momentary affect.

Study 1 Summary



Based on our results, and our variance decomposition efforts in particular we found that tonic effects represent the largest contribution of the three proposed processes linking DN to emotion in our participants' daily lives.

It's Time to Broaden the Replicability Conversation: Thoughts for and From Clinical Psychological Science

Perspectives on Psychological Science
2017, Vol. 12(5) 742–756

DOI: 10.1177/1745691617690042
www.psychologicalscience.org/PPS
SAGE

Jennifer L. Tackett[1], Scott O. Lilienfeld[2], Christopher J. Patrick[3], Sheri L. Johnson[4], Robert F. Krueger[5], Joshua D. Miller[6], Thomas F. Oltmanns[7], and Patrick E. Shrout[8]
[1]Northwestern University; [2]Emory University; [3]Florida State University; [4]University of California, Berkeley; [5]University of Minnesota; [6]University of Georgia; [7]Washington University in St. Louis; and [8]New York University

Annual Review of Clinical Psychology

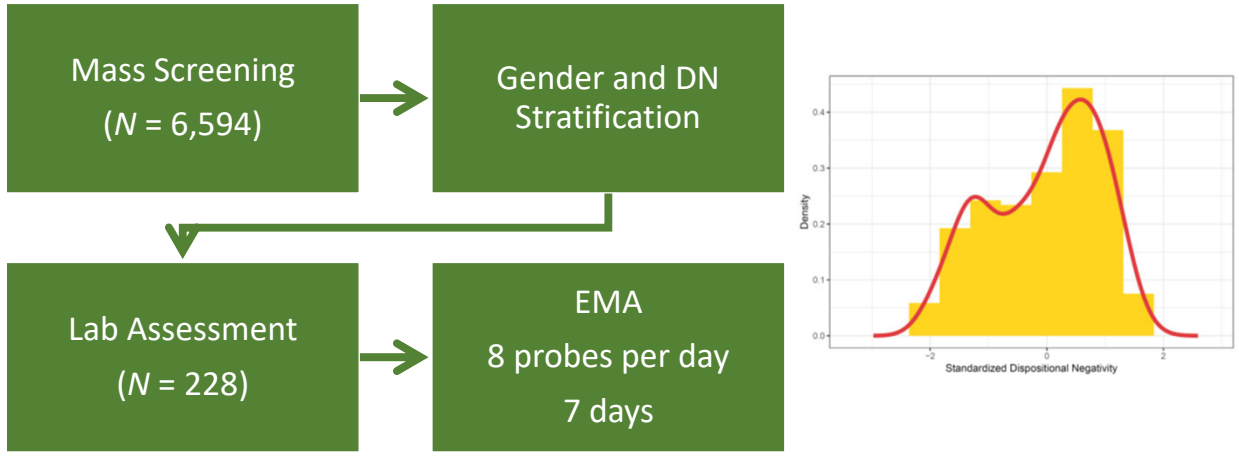
Psychology's Replication Crisis and Clinical Psychological Science

Jennifer L. Tackett,[1] Cassandra M. Brandes,[1] Kevin M. King,[2] and Kristian E. Markon[3]

Our findings were surprising in a few ways. For starters we did not find evidence of enhanced reactivity to recent negative events. The emotional reactivity effects we did detect were in response to positive events and opposite our expectations, though there is a growing body of work coming from the depression literature on mood brightening effects that may help explain this result.

With the backdrop of the replicability crisis in psychological science, we decided that we should subject our findings to a follow-up study.

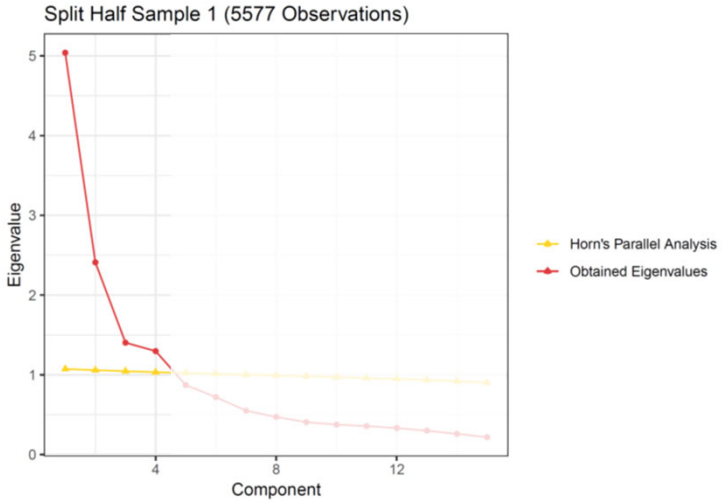
Study 2 – Overview



For study 2 then we obtained a larger screened sample, which we again stratified based on gender and DN scores. As this work is ongoing and longitudinal in nature, we sampled the higher dispositional negativity strata more intensively to obtain a sample slightly enriched for the risk of mental health disorder onset. The resulting bi-modal distribution of our dispositional negativity scores reflect that we were largely successful in these efforts.

Dimensionality of Momentary Mood

- Split-sample approach
- Principal components using parallel analysis to retain factors > 95th percentile



Not presented in talk -

A more diverse set of mood items necessitated that we examine the dimensionality of our momentary mood items.

We first started with a split-sample, principal components analysis. Using the 95th percentile in a parallel analysis, four components were initial identified.

Dimensionality of Momentary Mood

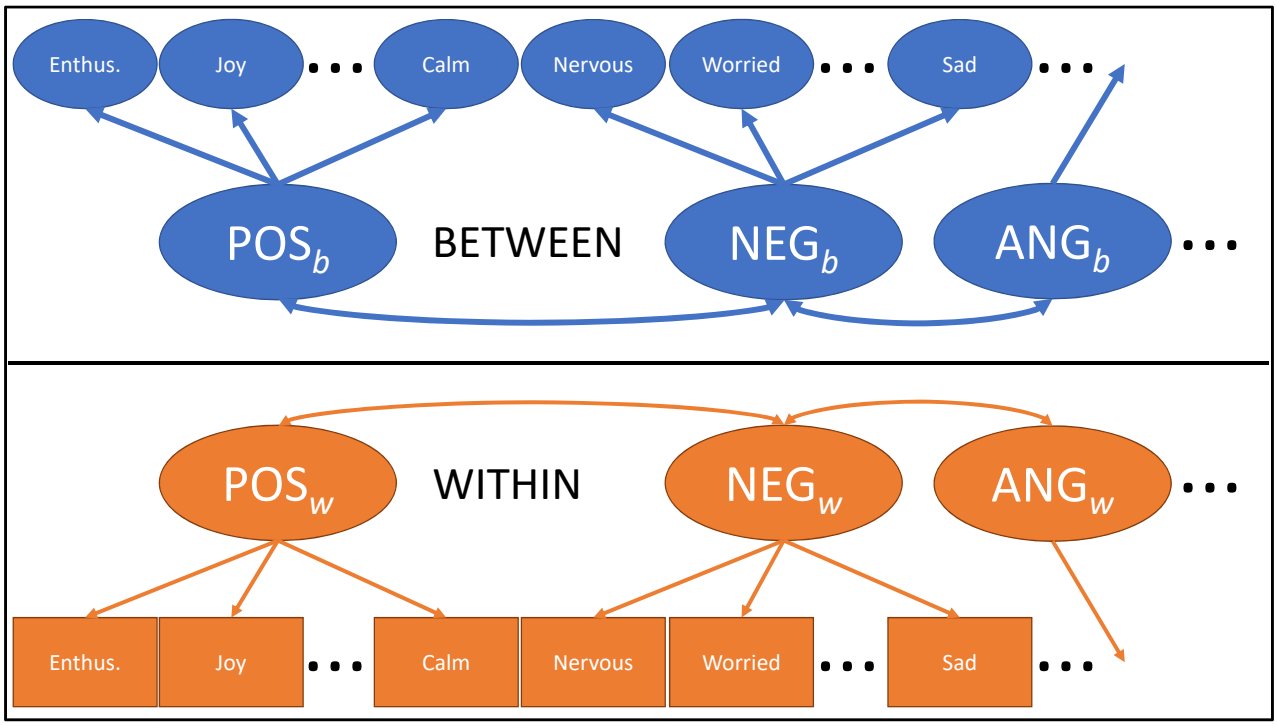
- Split-sample approach
- Principal components using parallel analysis to retain factors > 95th percentile
- 4 components retained

Table 1: Loadings from Split Sample 1

	Positive	Negative	Angry	Tired
Enthus	0.82	0.14	0.02	-0.16
Joy	0.87	0.11	-0.01	-0.07
Cheer	0.85	0.10	-0.05	-0.11
Calm	0.67	-0.27	-0.01	0.23
Content	0.78	-0.14	-0.04	0.04
Relax	0.71	-0.27	0.01	0.15
Nerv	-0.02	0.84	-0.09	0.02
Worry	-0.08	0.81	-0.05	0.06
Afraid	0.07	0.74	0.12	0.05
Annoy	-0.05	0.03	0.83	0.06
Angry	0.00	-0.03	0.92	-0.07
Slug	-0.03	0.11	0.02	0.84
Sad	-0.02	0.47	0.30	0.16
Tired	-0.04	0.03	-0.03	0.86
Hopeless	0.09	0.61	0.22	0.13

Not presented in talk -

Here are the standardized, rotated loadings from the first split-half sample.



Not presented in talk -

To follow-up we performed a multilevel confirmatory factor analysis.

ORIGINAL MODEL FIT:

$\boldsymbol{\chi^2_{MLR}}(df = 168) = 3041.65, p < .001$
$\boldsymbol{RMSEA} = .065, CI_{90} = [.063, .067]$
$\boldsymbol{SRMR_b} = .096; \boldsymbol{SRMR_w} = .072$

$POS_b/(POS_b + POS_w) = .474$
$NEG_b/(NEG_b + NEG_w) = .488$

FINAL MODEL FIT:

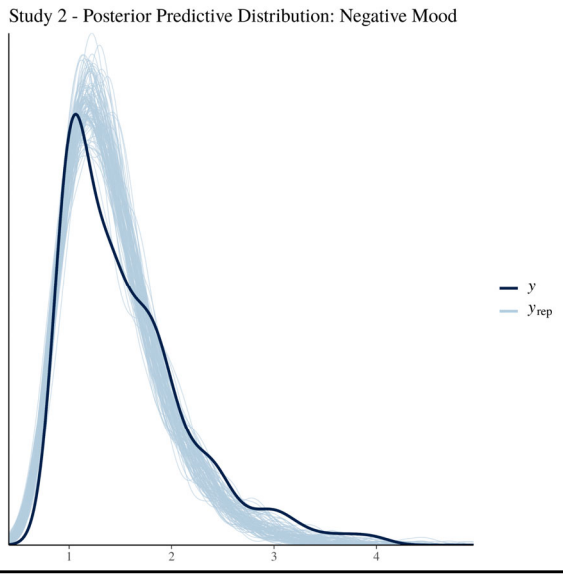
$\boldsymbol{\Delta\chi^2_{MLR}}(\Delta df = 12) = 1268.3, p < .001$
$\boldsymbol{\chi^2_{MLR}}(df = 156) = 1014.17, p < .001$
$\boldsymbol{RMSEA} = .036, CI_{90} = [.034, .038]$
$\boldsymbol{SRMR_b} = .086; \boldsymbol{SRMR_w} = .047$

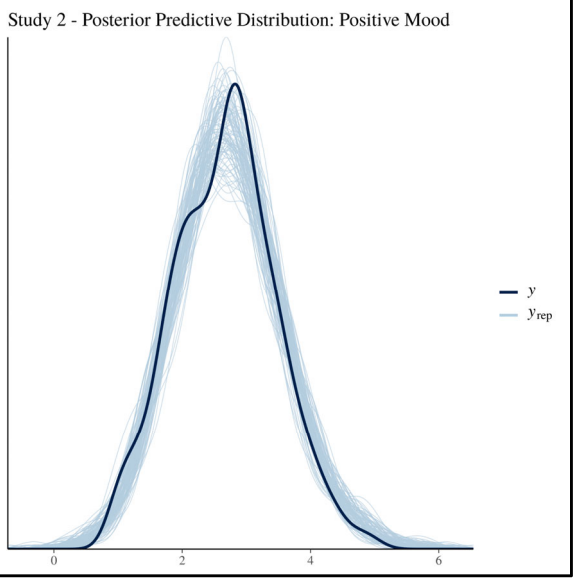
$POS_b/(POS_b + POS_w) = .523$
$NEG_b/(NEG_b + NEG_w) = .615$

Not presented in talk -

There is still evidence of model misfit to be sure, but a final model, in which error covariances were added within facets (e.g., anxious-worded items error variances were allowed to co-vary), exhibited reasonable model fit… and there was significant model improvement with the inclusion of said error covariances.

Posterior Predictive Distributions





Briefly, our measures of negative affect and positive affect exhibited similar distributional properties in our second study. [similar to what? **Study 1 or each other?]**

Study 2 Summary

Negative Mood

- Stable pattern for DN → Mood
  - Tonic > Exposure > Reactivity ✓✓
- Evidence of enhanced Reactivity
  - To negative events ✓✓
  - To positive events ✓✓

Positive Mood

- Stable pattern for DN → Mood
  - Tonic > Exposure > Reactivity ✓✓
- Evidence of enhanced Reactivity
  - To negative events ✓✓
  - To positive events ✓✓

While I am happy to discuss the specifics of our models and results, if anyone has questions, I'll just briefly summarize the results of study 2 for the sake of time.

First, we replicated the pattern of effects whereby the tonic effects of dispositional negativity explained the most variance in momentary affect followed by exposure to recent emotionally salient events, and then reactivity effects. This pattern held for negative and positive mood.

In study 2, with the larger, enriched sample, we did find evidence for increased reactivity to negative as well as positive events. Emotional reactivity to negative events was in the expected direction with dispositional negativity being associated with more intense negative affect following the experience of negative events as well as less intense positive affect.

Finally, we replicated the mood-brightening responses to recent positive events with dispositional negativity predicting less intense negative affect and more intense positive affect following recent positive events.

Summary & Future Directions

- The value of decomposing variance
- 'Mood brightening' and its implications (Rottenberg, 2017; Shackman et al., 2018)
- Relevance of *positive* mood and *positive* events
- Other core features of DN may be more relevant for development of mood disorders than enhanced reactivity in the moment
- Predicting mood disorder onset

I hope that these findings and this approach highlight the value of decomposing variation in these sorts of models. Had we just focused on the null hypothesis testing aspects of our results, we would have missed the consistent finding that tonic effects tend to matter most when examining the association between DN and momentary mood.

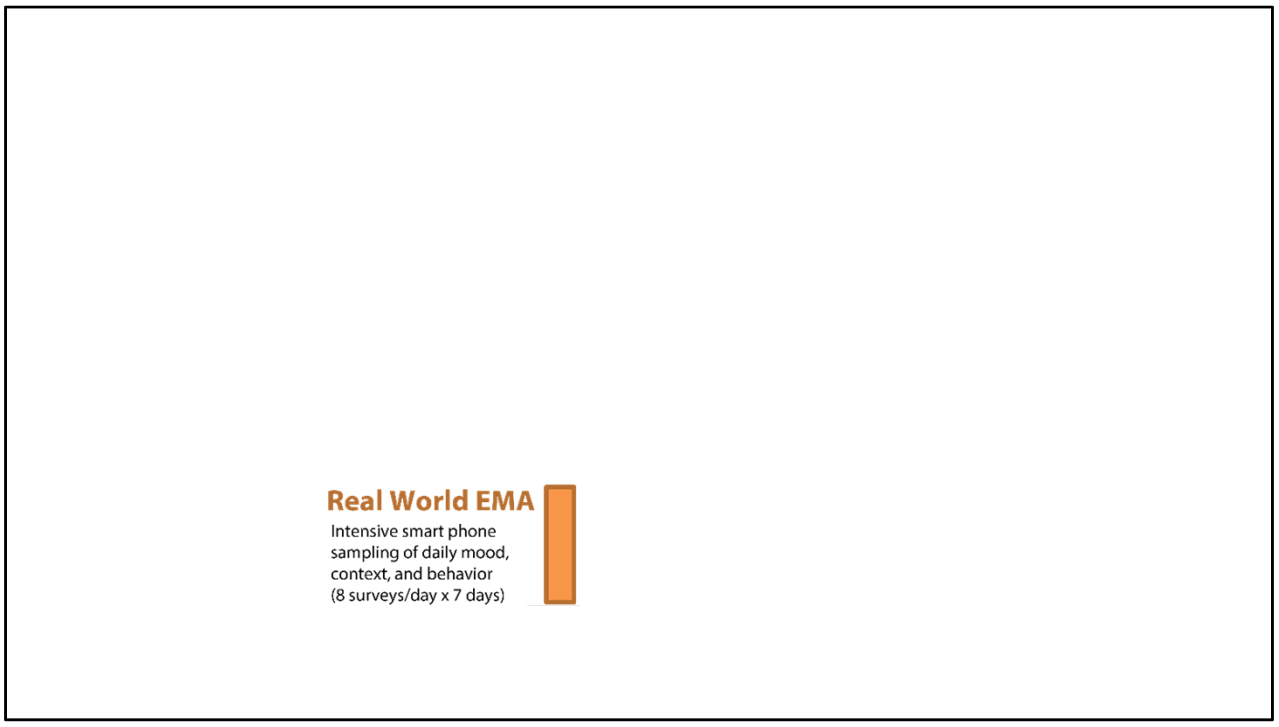
Our findings, across two independent samples, suggest that DN is associated with a mood-brightening effect in the wake of positive events. This finding suggests that therapies designed to increase exposure to pleasant experiences may have an outsized benefit when working with clients high in trait negativity.

Relatedly, we would just point out that positive events and positive mood are similarly important to individuals' emotional health as negative events and negative mood and deserve ongoing attention in this area of research.

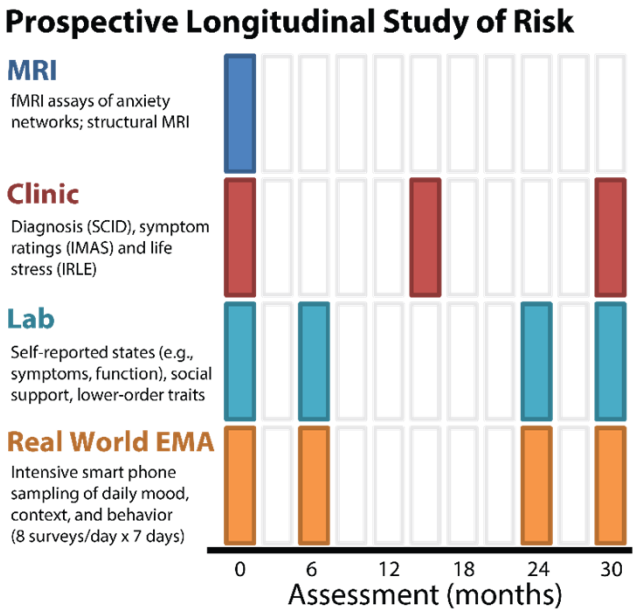
With the limited effects of reactivity in terms of explanatory variance, it may be worth considering other processes that may take a longer time to influence mood such as rumination and cognitive biases that may adjust the events recalled at a later time and how they are remembered and evaluated.

Finally, as we move forward we hope to extend this set of findings longitudinally to

understand how dispositional negativity and momentary affective dyanmics might predict mood disorder onset.



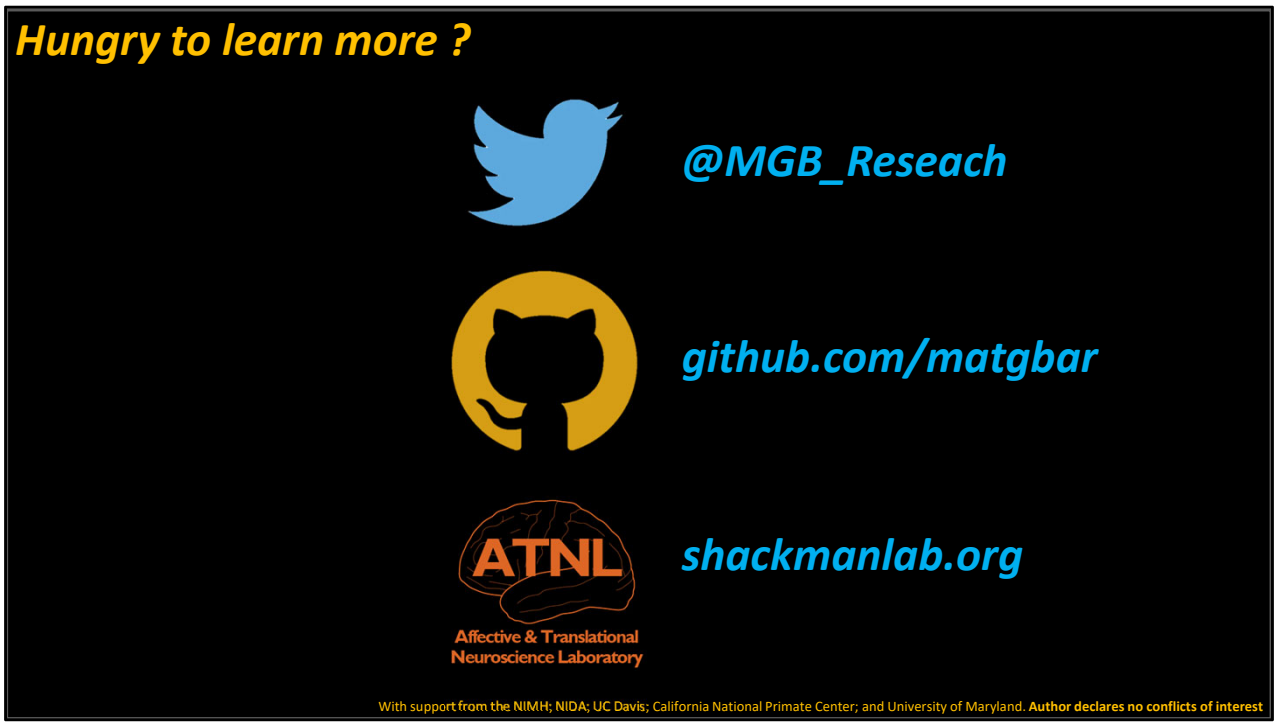
The data from study represent just a small portion of an ongoing longitudinal project



One that incorporates multiple neurobiological measures, clinical assessments, lab assessments, and repeated EMA collection windows. So stay tuned as we continue to finalize these data and work on mapping out change in young adults' emotional health over the course of a three-year period.

Thanks *for your attention*

With support from the NIMH; NIDA; UC Davis; California National Primate Center; and University of Maryland. **Author declares no conflicts of interest**



If you're hungry for more, please check out our website – Thanks!