

Coping with Disaster by Enhancing Meaning in Life and Resilience

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Outline

1. The Meaning Making Model and Our Preliminary Works

2. How to Engage in an Effective Meaning Making? Integration of Future Focus

3. Who benefited more from Meaning Making? Resilience and its Genetics

4. What are the Cognitive outcomes of Meaning making?

5. Group Intervention Based on the Meaning Making Model

1.1 The Meaning Making Model





Boyraz, & Efstathiou 2011; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008

1.2 Scale Development of Meaning Making

interview & existing literature
CTT & IRT
good construct validity
Excellent item discrimination values



Gan, Y.* Guo, M. & Tong, J. (2013). Scale development of meaning-focused coping. *Journal Of Loss & Trauma, 18*(1), 10-26.

1.3 Model replication with a Longitudinal Survey among traumatized university students (n=117)



2. How to Engage in an Effective MeaningMaking? Integration of Future Focus







2.2 Self-distancing and meaning making: An experiment

2.3 Self-Distancing, Suppression, and Meaning Making: a qualitative and quantitative study

2.4 Temporal Doppler Effect: Motivation and Protective Functions

2.1 Thriving in the Shadow of the 2008 Sichuan Earthquake



311 Chinese adolescents who resided in the most severely affected areas were surveyed
 at 15 months (T1) and 20 months (T2) following the earthquake

2.1 Implications

- For the first time, future focus were identified as a protective factor for resilience and contributed to the cognitive dimension of resilience.
- Given the important role of future focus in resilience, training focused on positive future could be integrated into group intervention efforts among disaster survivors to strengthen the cognitive aspect of resilience.

Gan, Y., Xie,X., Wang,T., Rodriguez, M. A. Tang,C.S. (2013). Thriving in the shadow of the 2008 Sichuan earthquake: two studies on resilience in adolescents. *Journal of Health Psychology, 18* (9) 1233 - 1242.



2.2 Self-distancing and Meaning Making

Objective:

 Examine the impact of self-distancing on meaning making by manipulating temporal /spatial psychological distance.

Participants:

• 69 university students, 22male, 47 female.

Procedures:



2.2 The impact of self-distancing on meaning in life by manipulating temporal /spatial psychological distance



Interaction between psychological distance and pre-post test was significant, F(2, 62) = 5.88, p= .005. η^2 = .16;

In both temporal and spatial distant groups, meaning in life in post test was significant improved (t = 4.74, p < .001; t = 3.09, p = .005) $_{\circ}$

suggests a specific, effective strategy to foster post-stress adjustment

2.3 Self-Distancing, Suppression, and Meaning Making

- a sample of 305 Chinese rescue medical staff
- Self-report of expressive suppression, job burnout, and job engagement



2.3 The Structure Model of Rescue Medical Staff: Positive Reappraisal Mediated the Relationship between Suppression and Job Engagement/Burnout (n=305)



Gan, Y., Wen,Y., Wang, J., Rodriguez, M.A., Gong, X. & Xie,X.(2014). Is Expressive Suppression an Effective Coping Strategy? A Study of Chinese Rescue Medical Staff Following an Earthquake. *Asian Journal of Social Psychology*, 17(4):264-276.

2.3 Self-Distancing, Suppression, and Meaning Making

- Interviewees: 20 staff
- all interviewees (100%) reported suppressing their emotions during or after their disaster relief efforts in Sichuan.
 - "I seldom expressed my feelings. I need to be stronger...."
- 60% of the participants reported that they were too busy concentrating on work to address their emotions
- 40% indicated that they preferred not to display their emotions because such displays would have exacerbated their sadness
- 30% reported that they were too shocked by the devastation and felt no emotion
- 25% stated that medical staff personnel should maintain a professional "emotional distance" from their work.

Gan, Y., Wen,Y., Wang, J., Rodriguez, M.A., Gong, X. & Xie,X.(2014). Is Expressive Suppression an Effective Coping Strategy? A Study of Chinese Rescue Medical Staff Following an Earthquake. *Asian Journal of Social Psychology*, *17*(4):264-276.

2.3 Theoretical Implications

- the first study to focus on expressive suppression among rescue medical staff working at a disaster site
- expressive suppression is a positive and effective emotion regulation strategy that is used by Chinese medical staff in situations that expose them to traumatic stressors.
- adopted two distinct methods that are complementary to one another
 - cross-sectional survey lead to a model that depicted the relationship between the investigated constructs
 - qualitative (interview) approach is more intuitive and could provide explanations for the new findings of the survey

compensated for the limitations of the cross-sectional study by providing casual inferences.

2.3 Practical Implications

- Psychological intervention has become a part of the aid for disaster victims in China only recently
- A common approach taken by mental health personnel is to encourage victims to recall the details of the traumatic experience and to discuss their negative feelings.
- The current results challenge the validity of this practice and suggest that mental health professionals should be cautious in employing therapeutic techniques, such as grief counseling, to avoid secondary trauma in the victims.
- Alternatively, we propose that mental health practitioners in China should advise traumatic victims in terms of when and to whom they should express their negative feelings as a form of "emotion expression management."

Is Expressive Suppression Adaptive ?

- In trauma context?
- In occupation area?
- In Asian culture?
- In short term but Not in long run?

2.4 Temporal Doppler Effect: Motivation and Protective Functions

a systematic asymmetry whereby future events are perceived as being psychologically closer than are past events of equivalent objective temporal distance (Caruso, Boven, Chin, & Ward, 2013)



Temporal Doppler Effect: Motivation and Protective Functions

Participants:

Study 1: 139 university students

Study 2: 143 university students

Study 3: 147 university students

Using hierarchical linear modeling, we examined the existence of the temporal Doppler effect and the role of future-orientation

Temporal axis paradigm

Gan, Y.,* ,Miao M., Zheng, L. &Liu, H.(in press). Temporal Doppler Effect and Future Orientation: Adaptive Function and Moderating Conditions. *Journal of Personality.*

Imagine you will submit you thesis:

(1). The deadline is 3 months from now. How would you represent this time distance on the below line?

Now

Future

(2). The deadline is 12 months from now. How would you represent this time distance on the below line?

Now

Future

Imagine you have failed in your English exam:

(1). The event happened 3 months ago. How would you represent this time distance on the below line?

Past

Now

(2). The event happened 6 months ago. How would you represent this time distance on the below line?

Now

2.4 Temporal Doppler Effect: Motivation and Protective Functions



Gan, Y.,* ,Miao M., Zheng, L. &Liu, H.(in press). Temporal Doppler Effect and Future Orientation: Adaptive Function and Moderating Conditions. *Journal of Personality*

Implications of the Temporal Doppler Effect

Implications for time management and stress intervention

- a practical way to cope proactively in line with the saying "leave the bad times behind and a bright future awaits"
- Motivational function: prepare important things as early as possible
- Protective function: shifting their focus from the past onto the future, they are more likely to feel a sense of hope, confidence or self-efficacy, thus being able to recover from the stress than those who do not refocus.



Gan, Y., Miao M., Zheng, L. &Liu, H.(in press). Temporal Doppler Effect and Future Orientation: Adaptive Function and Moderating Conditions. *Journal of Personality*

3. Who Benefit more from Meaning Making? Resilience and its Genetics



3.2 *FKBP5* X Early Family Cohesion

3.3 COMT X Early Adversity

3.4 COMT X Experimental Priming

3.1 The Components of Resilience

- Why do some people suffer real hardships and not falter?
- Resilience refers to a *dynamic process* of *positive adaptation when* an individual successfully copes with stress, frustration, trauma, and other negative life events.
- It is the skill and the capacity to be robust under conditions of enormous stress and change.

Finding meaning in adversity and trauma is an important aspect of resilience

However, a rich body of research on resilience has not yet integrated meaning making.

What types of people benefit more from the meaning making efforts





Both a bootstrapping test of mediated moderation and SEM with interaction terms demonstrated it was the low resilient people who benefitted more from the meaning-making process.

Intriguingly, it seems that highly resilient individuals do not need meaning making.

Explanation:

- 1. highly resilient individuals do not have meaning discrepancy
- 2. resilient people are able to buffer the negative impact of traumatic events and are thus less likely to engage in meaning making

Conclusion: highly resilient people do not need and have no chance of engaging in meaning making.

3.1 Resilience and Meaning Making Model



3.2 FKBP5 X Early Family Cohesion

Participants:

560 Chinese university students

Instruments:

- 1. early family cohesion
- 2. Consideration of Future Consequences questionnaire
- 3. buccal cells were used to extract DNA

Candidate gene: FKBP5 rs1360780 (FK506 Binding Protein 5)

Genotype: TT, CC, CT



3.3 COMT X Early Adversity

Participants:

Sample 1: 562 Chinese university students Sample 2: 454 Chinese company employees

Instruments:

- 1. early negative life events
- 2. Consideration of Future Consequences questionnaire
- 3. buccal cells were used to extract DNA

Candidate gene: COMT Val¹⁵⁸Met (catechol-O-methyltransferase)

Genotype: val (valine) met (methionine)

3.4 COMT × Prime Interaction on Future Orientation

> Participants were randomly assigned to one of the following two groups: controldeprivation (n = 94) or neutral priming (n = 90).

>Control-deprivation:

Participants were instructed to indicate which member of a pair belonged to a conceptual rule that had not been specified



The differential post-stress growth hypothesis

- Based on two previous studies on G×E interactions on resilience (Cicchetti & Rogosch, 2012; Dunn et al., 2014).
- Early stress exposure may activate the time perspective mechanism involving the COMT Val¹⁵⁸Met SNP and promote the development of future orientation as a component of stress resilience.
- Genetic composition may explain in part why only some individuals develop positive psychological resources after adversity.
- Guide prevention of and intervention for psychological suffering after adversity

The Potential Of Human Resilience When Facing Trauma Should Not Be Underestimated!

Individuals differ in their resilience, which is measurable in self-report.

Trauma intervention should be conducted in an individualized way.

Special attention and intervention should be given to traumatized people with low resilience.



4. What are theCognitive Outcomes ofMeaning Making?





4.1 Directed forgetting: An Implicit Approach

4.2 The causal and insightful words from expressive writing

4.1 Directed forgetting and PTG

Participants:

- 219 Sichuan earthquake survivors
- Middle school students
- Data collected 3 years after the earthquake

PTGI:

 top and bottom 10% were labelled as high (n = 24) and low-PTG groups (n = 22).



4.1 Directed Forgetting

- Macleod(1989) list method .
- After the words were presented, the experimenter instructed the participants to remember some words and forget the rest
- emotional material is comparatively resistant to forgetting and remains accessible
- the recall performance of To-Be-Forgotten (TBF) words is used as the dependent measure.
- 24 random sequences of the positive, neutral, and trauma-related words

Sunshine--Blood--desk



4.1 Directed forgetting and PTG

Participants: Sichuan earthquake victims (n=46)



Interpretations of Results

Why individuals with low PTG recalled more trauma-related negative words?

Even when instructed to forget, emotional memories linger and persist.

In other words, the traumatic memories that people would most like to forget might be those that are the hardest to forget, thus minimizing the directed forgetting effect

Why individuals with high PTG recalled more positive words?

This positive mood, based on the mood-congruency effect, should make positive words more accessible to people with higher PTG scores, thus weakening the directed forgetting effect.

4.2 Expressive Writing: Cognitive Words Promote Meaning Making and Post-traumatic Growth

- 56 traumatized university students were divided into high and low PTG group.
- We conducted an expressive writing task
- Two independent and well-trained coders read and rated the essays, counted the causal and insightful words
- a repeated measures MANOVA was used to examine the differences in writing content between two groups



4.2 Effects of Expressive Writing: Cognitive Words and Meaning Making Promote Post-traumatic Growth

Individuals who were high on PTG (vs. low PTG group) tended to use more cognitive causal-insight words in their writing, which reflected them to search for meaning from negative life events, thus resulting in PTG.

CCIW: t(34) = 2.386, p = 0.023, d = 0.790 CM: t(34) = 1.833, p = 0.076, d = 0.611 SM: t(34) = 1.666, p = 0.104, d = 0.635



CCIW = Cognitive Causal-Insight Words; CM = Captured Meaning; SM = Search for Meaning.

4.2 Effects of Expressive Writing

- Writing about traumatic events actually converts emotional experience into words with a logical structure.
- Using causal or insightful cognitive words in writing stressful events actually reflect an individual's engagement in a meaning making process to reorganize and reappraise of traumatic events for the purpose of meaning making.

5. Group intervention based on MMM



5.1 A 3-stage Meaning Making Model

5.2 A protocol of group-based trauma intervention

5.3 A RCT among cancer patients

5.1 A 3-stage Meaning Making Model



5.2 A protocol of group-based trauma intervention

- Semi-structured
- 2 hours each session
- 2 times per week
- Totally 8 times
- 1 leader + 1 assistant

Issues

- Why I was suffered? Why me?
 - At the time of diagnosis; now
- Any benefit finding?
- Meaning in Life
- Future plan, life goals

Activities

- Picture drawing, clay model making
- Film episodes
- Blessing, sending gifts

A protocol of group-based trauma intervention

- 1. The concept and resources for meaning in life
 - Get to know each other
 - Psychoeducation
 - Sign contract
- 2. Encountering cancer
- Picture drawing: the initial feeling of learning cancer diagnosis
- 3. Live with cancer (1)
- clay model making : cancer and me
- 4. Live with cancer (2)
- Picture drawing: the Garden of Recovery

- 5. Overview of ones life
 - Life horizon
- 6. Life and Death
 - Picture drawing: Death
 - Motto composition
- 7. Live at present
 - Picture drawing: Cancer And Me: A Revisit
 - Life planning

8.Farewell and Looking forward future

- Summary
- Blessing
- Sending gifts

A protocol of group-based trauma intervention



5.3 RCT Design



6. Limitations and Future Research Suggestions

6.1. Measures other than self-report should be developed

- implicit measures
- Objective measures
- behavioral measures
- Experimental Sampling Methods
- ERP (Event-Related Potential) & fMRI (Functional Magnetic Resonance Imaging) evidences

6.2. To what extent is PTG a reliable measure of post- traumatic mental health

- The measuring of PTG was solely on self-report which could not rule out the element of "positive illusion" in the Post-traumatic growth concept.
- It has been argued that the "self-report PTG" contains both selftranscending, constructive element and self-deceptive, illusory element of growth.

6.3 The Issue of Cross-Cultural Generalization

Some results are deemed to be cultural unique

Chinese culture, Asian culture, universality

6.4 The problem of dichotomizing continuous variables

- Dichotomization has only negative consequences and should be avoided.
- Dichotomization of predictor variables has serious costs and no benefits. It is an undesirable practice that should no longer be used in research (DeCoster, 2009).
- Dichotomization of predictor variables substantially reduces power in simple regression.
- This loss of power applies not only to normal distributions but also to skewed and bimodal continuous distributions and to multistep distributions.
- Dichotomization can distort the true relationships among collinear predictor variables and can impede the selection of the appropriate multivariate model.

6.5 Sample Sizes and Replicability

- A priori statistical power and sample size plan should be applied whenever possible.
- A major problem in the field has been small sample sizes and a general lack of power.
- This not only leads to problems detecting effects that actually exist, it also results in lower precision in estimates and systematically inflated effect sizes.
- some have argued that running large numbers of weakly powered studies increases the chance of obtaining artifactual results.

"LEAVE THE BAD TIMES BEHIND AND A BRIGHT FUTURE AWAITS"



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