Grief program outline

A time to mourn: Exploring the mystery of grief

CCNY June 2010

1. Introduction

Slide #1: "A time to mourn"

a) Grief is accepted as normal in Biblical period ~ part of the cycle of emotional responses to life

b) "My presentation today in a nutshell": Propositions…

Slide #2: Faces of grief

a) grief: not only about death; an appropriate response to almost any loss;

b) grief: can be mistaken for depression and is not necessarily pathological

c) grief: can be very hard to give up: grief can hurt physically (PAG) and yet can be self-rewarding (dopamine)

d) some lost objects not "gone forever" (lost loves, lost place, prison)

Slide #3: college student s ? (with soccer ball)

e) college population especially susceptible to grief; students don't know what to "name" it: Stage of development: identity search, "open relationships," hooking-up, lack of boundaries of self, tension between narcissism and giving to others <e.g., community service >

**Baumeister, RF, Wotman, S.R., & Stillwell, A.M.**  (1993). Unrequited love: On heartbreak, anger, guilt, scriptlessness and humiliation. *Journal of Personality and Social Psychology, 64,* 377-394.

93% of college students of both sexes reported that they had been spurned by someone they passionately loved, as n95% said they had rejected someone who was deeply in love with them (Archer, p. 350).

Slide #4: 'Grief on the campus

**Kline, William H.** (2006). [The re​-​emergence of separation fears in the college bound adolescent: From disruption to resolution.](http://psycnet.apa.org/index.cfm?fa=search.displayRecord&id=203F4180-90DB-2979-55F8-3B031559D5E6&resultID=107&page=5&dbTab=all) *Journal of Infant, Child & Adolescent Psychotherapy. 5(4)*, 420-436.

**The struggle to separate from childhood and family can be problematic even for the most sophisticated, academically talented and self-assured adolescent.** For some adolescents the re-emergence of separation anxiety may suggest earlier unresolved separation-individuation issues.

Slide #5: 'most, if not all people, never resolve their grief'

f ) we participate continually in the act of grieving; some grief never gets resolved. Why is that??

**Zisook, S. & DeVaul R.** (1985*).* Unresolved Grief. *American Journal of Psychoanalysis, 45*, 370-379.

 In our own study (Ziskook, S, DeVaul, RA, and Click, MA, 1982, Measuring symptoms of grief and bereavement, *American Journal of Psychiatry, 139(12),* 1593), grief did not simply end at six weeks, six months, or even 6 years. Although several features seemed to peak within one to two years, particularly those dealing with dysphoria, many symptoms and behaviors continued to be present for years, perhaps indefinitely. All items in our grief inventory were indorsed by at least some people even 10 or more years after bereavement. The most commonly endorsed items after 10 years were "No one will ever take his/her place in my life," "I very much miss this person," "I have never known a better person," "Sometimes I dream about him/her," "I can't avoid thinking about him/her," "I feel that it is unfair that he/she died," and "Even now it is painful to recall memories of him/her"; "Things and people around me still remind me of him/her"; "I still get upset when I think about him/her"; "At times I still feel that I need to cry for him/her"; and "At times I feel as though he/she is still with me." Thus it seems that some aspects of grief work may never end for a significant proportion of otherwise normal bereaved individuals.

 Quote on slide is from "Summary" section, p 377. Authors call for research defining the line between normal grieving and matters of medical or psychiatric concern…

g) Despite all we think we know about grief, grief still remains a mystery…

Slide #6: 'Workshop agenda

 Personal statement

 Models of grief

 fMRI studies

 Clinical interventions

 Future?

2. Personal responses and art

(Ok, let's get started…)

a) questions for participants (to be the personal "meditation points," as we go through the presentation):

 1) "a personal experience of grief that did not involve death" [Grief is not just about death]

 2) "my most intense period of grief"

 3) "residual elements of grief in my life today" [Normal grief may never be *totally* resolved]

b) Popular art ~ a love relationship with (or at least a fascination with) grief:

Slide #7: Randy Newman

 1) Randy Newman video: "I'll never get over losing you"

 Everlasting grief sells songs; the idea must be culturally "acceptable"

 2) "tear-jerkers" (that don't focus on dying)

 a. movies: Field of Dreams; ET; Breakfast at Tiffany's; Homeward Bound

 b. songs: ("Memory"/Cats; "Have yourself a merry little Christmas" (Judy Garland; WWII)

 c. events (weddings, graduations)

Slide #8: movie rental

<http://www99.epinions.com/content_1316593796> : "
These are definitely movies I love to watch over and over. I never can brace myself enough to stop myself from crying. No matter how many times I have seen the movie, I still end up feeling the tears roll down my face! Believe me these are well worth the rental time… ,

c) my personal statement … [Grief is so normal/universal, that we probably all have multiple stories of grief in our lives]

 ~ my mother never stopped grieving

 ~ delayed grief for my father (2 years later)

 ~ year-long grief for lost relationship (my wife thought I was depressed)

~ many congregants grieve at yahrzeit/yizkor, some do not; some have never stopped grieving

3. Models of grief

Slide #9: How does it work?

 "How does it work?" (cf. Warren Goldstein's basic question)… Is grief an "injury"? How "normal is grief"? Can there be "pathological grief" (cf. complicated/extended/etc. grief) or is the "pathology" something other than grief? DSM-V: a disease ??

*Slide #10: Freud (grief is a natural healing process)*

*Model A) The homeostasis model [imbalance = lack of homeostasis]*

**Freud** (1916): libido clings to lost object and needs to be freed.

“.. and the ego, confronted as it were with the question whether it shall share this fate [of non-existence, as with the lost object], is persuaded by the sum of the narcissistic satisfactions it derives from being alive to sever its attachment to the object that has been abolished ("Mourning and melancholia," 1917, p. 255).

Slide #11: Lindemann/Coconut Grove

**Lindemann, E.** (1944). Symptomatology and management of acute grief. Am J Psychiatry. *101,* 141-148

Dr. [Eric Lindemann](http://en.wikipedia.org/wiki/Eric_Lindemann), a Boston psychiatrist, studied survivors and their relatives of Coconut Grove Fire, Boston, 1942. A classic paper, widely considered to have laid the foundation for research in this area. Identification of "symptoms" ~ making it a "dis-ease." [Not in Lavery data base]

~ Somatic Distress (Comes in waves and lasts 20-60 minutes)

 Tightness of the throat, Choking, Shortness of breath, Sighing, Empty feeling in the stomach, Loss of strength, Tension..

~ Psychiatric distress: Pre-occupation with the deceased

 Hallucinations (Actually see the deceased or sense presence), Sense of unreality, Guilt, Hostility, ~ Changes in patterns of conduct, Restlessness, Aimlessness, Loss of concentration, Identification , with the deceased, Assume traits of the deceased, Show signs of last illness of deceased…

<http://www.wyfda.org/basics_4.html> (Wyoming Funeral Directors Assn.)

"Morbid" grief reactions: delayed; distorted (dramatic change in social relationships)

Treatment: helping patient confront pain of bereavement, fears of insanity, fears of emotions ~ including hostility & depression…

Slide #12: Complicated Grief Disorder

 The field identifies a new illness

Grief and "complicated grief" are different…

**Dillen, Let; Fontaine, Johnny R. J.; Verhofstadt-Denève, Leni** (2008). [Are normal and complicated grief different constructs? A confirmatory factor analytic test.](http://psycnet.apa.org/index.cfm?fa=search.displayRecord&id=11738E05-ED9D-3FDE-E8E8-24CDDEA7C7EC&resultID=3&page=1&dbTab=all) *Clinical Psychology & Psychotherapy, 15(6)*, 386-395.

 n = 456 young adults (ages 18-25) who had (at one time) experienced a significant bereavement

G and NG reactions can be distinguished by their very nature, except for one CG reaction (viz. 'yearning'), that loaded on both factors. [See "Yearning" file.]

Slide #13: Depression or (just) Complicated Grief?

Various studies find differences here too…

**Fisher, et al.** (2005): dopamine in grief; **Najib, et al.** (2004): may be the same; **O'Connor, et al.** (2008); **Prigerson, et al.** (1996): empirical evidence that complicated grief and bereavement-related depression are distinct; **Prigerson, et al.** (1995); **Reynolds, et al.** (1999)

***Fisher, H., Aron, A., Strong, G., et al.*** *(2005). Motivation and emotion systems associated with romantic love following rejection: an fMRI study. Washington, DC: Society for Neuroscience.*

*The behavioral reactions of rejected lovers suggest that the dopaminergic reward system of the nucleus A-VP-P region accompanies reactions that are basic to separation from a loved one… The findings suggest that the neural mechanism activated following rejection is associated with elevated activity of dopamine, because this neurotransmitter produces heightened alertness, energy, and motivation ~ traits that abandoned creatures exhibit as they call for help and search for the source of their abandonment: their mother, sibling, or mate.*

***Najib****, Arif;* ***Lorberbaum****,* ***Jeffrey P., Kose, Samet, Bohning, Daryl E., George, Mark S.*** *(2004).* [*Regional brain activity in women grieving a romantic relationship breakup.*](http://psycnet.apa.org/index.cfm?fa=search.displayRecord&id=F1C83230-9E18-13FB-B09B-34E147CFE7A5&resultID=34&page=2&dbTab=all) *American Journal of Psychiatry, 161(12), 2245-2256.*

*9 right-handed women whose romantic relationship ended within the preceding 4 months were studied. During acute grief, subjects showed brain activity changes in the cerebellum, anterior temporal cortex, insula, anterior cingulate, and prefrontal cortex…*

*Grief and depression are similar???? "[O]ur findings of diminished brain activity during ruminative relative to neutral thought in the striatum and anterior cingulate/prefrontal cortex as well as our findings in these regions of decreasing activity during ruminative relative to neutral thought with increasing baseline grief levels are consistent with functional imaging studies of depression, which consistently report mainly decreased anterior cingulate/medial prefrontal cortex activity and decreased dorsolateral prefrontal cortex activity as well as less consistent findings of striatal decreases…" [Perhaps all Ss had "complicated grief"?? {Unlikely})*

Slide #14: Depression v Grief

 Factor analysis: 45% shared variance…

Some people who grieve are depressed, some are not;

Some depressed people are grieving, some are not.

**Hogan, N, Wordon, WJ, and Schmidt, L.A.** (2003-2004). An empirical study of the proposed complicated grief disorder criteria. *Omega, 48(3),* 263-277.

 Factor analysis -> 46.5% shared variance.

Slide #15: "Prolonged Grief Disorder": DSM-V

**Prigerson, Holly G.; Vanderwerker, Lauren C.; Maciejewski, Paul K.** (2008). [A case for inclusion of prolonged grief disorder in DSM​-​V.](http://psycnet.apa.org/index.cfm?fa=search.displayRecord&id=A6660F06-D918-F0BE-FEFA-1EEE00D74FD5&resultID=6&page=1&dbTab=all) In Stroebe, Margaret S. (Ed); Hansson, Robert O. (Ed); Schut, Henk (Ed); Stroebe, Wolfgang (Ed); Van den Blink, Emmy (Illus).. *Handbook of bereavement research and practice: Advances in theory and intervention. (pp. 165-186).* Washington, DC: APA

1) Excellent review article for a summary of the thinking in the field about this issue.

2) Risk factors for PGD:

~ insults to secure attachment: child abuse, separation anxiety, insecure attachment styles

 This foreshadows the "attachment theory" model that we'll note later…

3) \*The omission of PGD from the diagnostic nomenclature inhibits the ability of clinicians to diagnose and treat the many bereaved individuals who will develop PGD…" p. 167…

 [Why would its exclusion prohibit Rx? MH.]

 4) grief is pathology… greater risk for suicide (Latham/Prigerson, 2004)

Proposed algorithm: Yearning + 5 symptoms, longer than 6 months (cf. slide)…

**Prigerson, HG, Frank, E., Kasl, SV, et. al.**  (1995). Complicated grief and bereavement-related depression as distinct disorder: Preliminary empirical validation in elderly bereaved spouses. *American Journal of Psychiatry, 152,* 22-30.

 n = 82 recently widowed elderly.

 Data collected 3-6 months after the deaths of the subjects' spouses, and follow-up data were collected from 56 of the subjects 18 months after the baseline assessments.

 Items for assessing complicated grief came from a variety of scales used to evaluate emotional functioning (e.g., the Hamilton Depression Rating Scale, the Brief Symptom Inventory). The outcome variables measured were global functioning, medical illness burden, sleep, mood, self-esteem, and anxiety. **[So with these scales ~ some of which measure depression, how is it possible to separate grief from depression????]**

RESULTS: **Seven symptoms constituted complicated grief: searching, yearning, preoccupation with thoughts of the deceased, crying, disbelief regarding the death, feeling stunned by the death, and lack of acceptance of the death.** Baseline complicated grief scores were significantly associated with impairments in global functioning, mood, sleep, and self-esteem in the 56 subjects available for follow-up.

 Authors cite (and for clear symptoms of depression v grief, possibly see) Nuss WS, Zubenko GS,1992, Correlates of persistent depressive symptoms in widows. *Am J Psychiatry, 149,* 346-351.

[Nuss and Zubenko used the Beck Depression Inventory to assess depression ! Possible factors that load on depression and not on grief: guilt? sleep disturbances? Self-esteem?]

***Model B****) Stage model ~ emphasis on the process leading to back to homeostasis and resolution*

Slide #16: Kubler-Ross book

Slide #15: Questionnaire items

Slide #18: Stage theory of grief (Maciejewski's data 1)

Slide #19: Stage theory of grief (Maciejewski's data 1)

Maciejewski, et al (2007): empirical evidence supporting "stage" model

**Model C**) *The evolutionary adaptation model*

*What is the purpose ~ the survival value ~ the evolutionary advantage ~ of grief?*

Slide #20: "Analytical rumination hypothesis"

a) Grief/depression makes us "slow down" and concentrate on our problems

**Andrews**, Paul W., and **Thomson**, J. Anderson. (2009). The bright side of being blue: Depression as an adaptation for analyzing complex problems.  *Psychological Review, 116(3)*, 620-654.

 The analytical rumination hypothesis proposes that **depression is an evolved response to complex problems, whose function is to minimize disruption and sustain analysis of those problems by (a) giving the triggering problem prioritized access to processing resources, (b) reducing the desire to engage in distracting activities** (anhedonia = an inability to experience pleasurable emotions from normally pleasurable life events such as eating, exercise, social interaction or sexual activities.), and (c) **producing psychomotor changes that reduce exposure to distracting stimuli.** As processing resources are limited, sustained analysis of the triggering problem reduces the ability to concentrate on other things.

Therapeutic intervention: increase patient's opportunity for rumination of the triggering reasons for the depression (e.g., writing about the incident); working with the rumination may uncover anger, guilt, etc.

**[Classic model of "working through"…]**

 Depression/grief heightens attention, minimizes distractions, slows us down ~ so that we can attend to the problem to solve it [i.e., recover the lost object?]

Slide #21: Does grief facilitate detachment or reunion?

b) Grief facilitates detachment… or reunion (??)

 Nucleus Accumbens (NA); see below, in fMRI study

**Freed**, Peter J. and **Mann**, J. John. (2007). Sadness and loss: Toward a neurobiopsychosocial model. *American Journal of Psychiatry, 164 (1),* 28-35.

 [Does reward remain robust in grief, or does it subside? MH] Freed and Mann hypothesize that if the **detachment model** is correct, the pangs of grief would occur with reduced **NA (Nucleus Accumbens)** activity over time, as the salience of the cues decreases and acceptance of the reality leads to detachment. If the **reunion** model is correct, then the pangs of grief would continue to occur with NA activity, with reward activity in response to the cues motivating reunion with the deceased. This study demonstrates that each of these models may be accurate for distinct subgroups of bereaved individuals: CG and NCG.

[see below, slide #33]

**Model D**) The "growth" model:

 *The 'meaning-making'/reconstructing reality and self" model*

Slide #22: Meaning-making: reconstructing the self

Grief facilitates growth

**Gillies/Neimeyer**  (2006) Sense-making, benefit-finding, identity change. Rx: encourage these pursuits

**Gilbert** (1996/2007) URL: <http://www.indiana.edu/~famlygrf/units/whatis.html>

Grief is a "personal journey" Rx: Accompany the griever.

**Kessler** (1987) Bereavement and personal growth. J*ournal of Humanistic Psychology, 27,* 228f.

 Grief enhances (can instruct us in) existential awareness : that nothing is permanent, there are no "guarantees" in life; a sense of "finitude" can create "personal responsibility"; loss can lead to greater reliance on internal security and evolving personal identity …

**Model E**) The "replay of childhood attachments" model

Slide #23: Bowlby : Stages of reaction to separation

 Adult stages parallel childhood separation stages

Slide #24: Bowlby quote

**Bowlby, …** (1969) Attachment and Loss, Vol. I [trilogy] Maternal deprivation -> mental health problems in children. Two models of grief (1980):

 detachment model: grief emotion aids in "acceptance of reality"

 reunion model: grief emotion is a protest against separation, calling for reunion

Bowlby, J. *(1960).* Grief and mourning in infancy and early childhood. *Psychoanalytic Study*

*of the Child*, *15*, 9-52.

" Whereas separation anxiety dominates the protest phase of response to separation, with its heightened but frustrated attachment behavior mingled with anger, grief and mourning dominate the despair phase, as the frustration of separation is prolonged." (Ainsworth and Bowlby, 1991, p 3) Bowlby, J. (1980) *Attachment and loss: Vol. 3. Loss: Sadness and depression.* New York: Basic Books.

A basic theme of the theory is that persons who have experienced **(lack of) dependability and consequent (in)security** in their early childhood relationships will subsequently remain influenced by this in forming, maintaining and—most importantly here—**in relinquishing relationships**. Another basic theme, related to the previous one, is that the child builds implicit **‘working models’ of relationships between the self and others** (which incorporate positive versus negative images of self and other), and about how these relationships work (Bowlby, 1969). These models are basic schemas for viewing the world. (Stroebe, Paving the way, p. 133)

Slide #25: Attachment and Grief (Johnson, et al., 2007)

Slide #26: Attachment and Grief (Vanderwerker, et al., 2006)

*Slide #27: Attachment and Grief (Silverman, et al., 2001)*

Empirical evidence for role of early attachments:

**Johnson, JG, Zhang, B., Greer, JA, & Prigerson, HG.** (2007). Parental control, partner dependency and complicated grief among widowed adults in the community.  *Journal of Nervous and Mental Disease, 195,* 26-30.

n = 192 widows; correlational study of paper/pencil measures

 Empirical evidence: "perceived parental control in childhood" correlated with "bereavement dependency" and "complicated grief"; dependency-on-spouse may be a mediating variable. "Parental affection" did not correlate significantly with CG. p < 0.0001

**Vanderwerker, LC, Jacobs, SC, Parkes, CM, & Prigerson, HG.** (2006). An exploration of association between separation anxiety in childhood and complicated grief in late-life.  *Journal of Nervous and Mental Disease, 194,* 121-123.

 n = 283; paper/pencil measures.

 Empirical evidence: Childhood separation anxiety correlated positively with Complicated Grief (p< .05), and not with PTSD or MDD (major depressive disorder).

**Silverman**, GK, **Johnson**, JG, and **Prigerson**, HG. (2001). Preliminary exploration of the effects of prior trauma and loss on risk for psychiatric disorders in recently widowed people. *Israeli Journal of Psychiatry and Related Sciences, 38,* 202-215.

 n = 85 widows (20s-80s); recollections and paper/pencil measures.

 Empirical evidence: traumatic grief correlates with death of parent and parental abuse

4. Evidence from fMRI studies

Slide #28 fMRI described

ROI = regions of interest

BOLD = blood oxygenation level-dependent

GLM = general linear model

DLPFC = dorsolateral prefrontal cortex… (attentional control regions)

ACC = anterior cingulated cortex

Important orientation words for describing brain positions:

**Coronal**: Sections looking head-on toward an upright subject directly facing you **Sagittal:** Sections looking head-on toward an upright subject facing sideways **Horizontal:** Also known as transverse or axial sections, are parallel to the floor when the subject is standing upright

**anterior** (towards the front)

**posterior** (towards the rear)
**superior** ("above")

**inferior** ("below")
**medial** (towards the midline)

**lateral** (away from the midline)
**rostral** (towards the nose; Lat. rostrum, beak)

**caudal** (towards the tail; Lat. cauda, tail)
**dorsal** (towards the back; Lat. dorsum, back)

**ventral** (towards the belly; Lat. venter, back)

A Grief is a complicated perceptual/cognitive activity involving intricate brain networks.

Slide #29 Brain imaging and grief: (Gundel et al., 2003)

**…A first look into the brain as it processes grief !**

Best review article: O'Connor, (2005)

fMRI uses a "subtraction" paradigm (brain activity in "emotional state" minus brain activity in "neutral" state)

goggles during fMRI

n= 8 women, grieving a close loss within the past year

grief-*photos* were of the lost relative; grief-*words* taken from personal interviews

 Three main areas of brain activation for grief-pictures:

a) **posterior cingulated cortex**: previously implicated in "autobiographical memory," pain, panic, and not in depression.

b) **Anterior cingulated cortex (ACC)** [Error detection and decision-making, assessing thought and emotion: Wiki]]

(cf. Eisenberger, 2003, for same areas stimulated during social exclusion [ESE].)

c) **Insula**: previously implicated in "attention" to bodily states, e.g. emotional and physical pain...

suppression of pain; reads physical cues -> "social emotions" (e.g., disgust, morality, empathy; grief?)

 <http://wapedia.mobi/en/Cingulate_cortex>

c) other areas: medial/superior frontal cortex; **cerebellum, pons**, cuneus, superior lingual gyrus, precuneus, fusiform gyrus

 (This was a review article of Gundel, et al., 2003; she was part of the research team)

Slide #30: ACC, PCC, Amygdala [later], PAG [later]

Slide #31: Insula and ACC

*Slide #32: Limbic System*: Pons, Cerebellum, Amygdala [ later]

***gyrus****: a convex fold or elevation ~ a ridge on the surface of the cerebral cortex; separated by shallow grooves (sulci; sulcus, sng.) or deep grooves (fissures)*

***cortex****: The****cerebral cortex****is a sheet of neural tissue that is outermost to the*[*cerebrum*](http://en.wikipedia.org/wiki/Telencephalon)*of the mammalian*[*brain*](http://en.wikipedia.org/wiki/Brain)*. It plays a key role in*[*memory*](http://en.wikipedia.org/wiki/Memory)*,*[*attention*](http://en.wikipedia.org/wiki/Attention)*, perceptual*[*awareness*](http://en.wikipedia.org/wiki/Awareness)*,*[*thought*](http://en.wikipedia.org/wiki/Thought)*,*[*language*](http://en.wikipedia.org/wiki/Language)*, and*[*consciousness*](http://en.wikipedia.org/wiki/Consciousness)*.*

*B*  Is there a "fear factor" in grief?

Freed et al (2009) Is there a fear or anxiety component to grief?

 (Yes ~ cf. involvement of the amygdala)

Ss = mourning loss of a pet

 **[Amygdala** stores memories of fear, and sends signals to the hypothalamus for activation of the sympathetic nervous system, and to the tegmental nucleus for activation of dopamine, norepinephrine, and epinephrine… WIKI]

a) **amygdala** : detects alarm, separation from caregivers and symptoms of separation distress

 (cf. Bowlby's "separation anxiety" hypothesis)

b) **DLPFC** reactively modulates attentional aspects of amygdala, and

c) **rACC** reactively modulates emotional aspects ofamygdala

The more Ss were disturbed by the deceased-related words in a "reaction time" task (name the color of words) , the less was the DLPRC "lit up"

The more Ss felt sad when considering the memories, the less the rACC "lit up"

*Slide #33 DL-PFC graphic*

*Slide #34: "Functional Connectivity (Freed, et al, 2009)*

*rACC modulates amygdala's response to emotional distress by modulating emotion*

*ACC (anterior cingulate cortex)*

C. Physical/social pain

Slide #35 Social exclusion activates PAG and Dorsal ACC = pain

Social pain is analogous in its neurocognitive function to physical pain

**Eisenberger, , N.I., Lieberman, M.D., and Williams, K.D.** (2003). Does rejection hurt: an fMRI study of social exclusions. *Science, 302,* 290-292.

[UCLA]

 n = [not reported]

 Dorsal ACC more active during exclusion (ESE) than during inclusion (p. < .005)

 Two regions of RVPFC more active during ESE than during inclusion (0. <.005)

RVPFC correlated negatively with perceived distress (positively with *diminished* distress)

**ACC**: Ablating the ACC (anterior cingulate cortex) in hamster mothers disrupts maternal behavior aimed at keeping her pups near… and ablating the cingulated in squirrel monkeys eliminates the spontaneous production of the separation cry…. In humans, the ACC is activated in mothers by the sound of infant cries… (E., p 271)

***IV****:*

*1) conditions of a computerized a virtual "ball throwing" game, while in MRI*

 *a)* ***explicit social exclusion (ESE)****: individuals were prevented from participating in a social activity*

 *b) implicit social exclusion (ISE): individuals ~ because of extenuating circumstances ~ were unable to join in the activity*

 *c) control (inclusion)*

*2) feelings of distress*

 *a) how excluded they felt (questionnaire)*

 *b) level of social distress (questionnaire)*

***DV****: brain activity (fMRI)*

*a) ACC*

*b) RVPFC (right ventrical pre-frontal cortex)*

**Panksepp** (1998) Panic emerges from the region in the periaqueductal Gray **(PAG)…** Emotional pain induced by computer-generated social exclusion affects some of the same primary brain regions as does physical pain (Eisenberger, et. al, 2003), indicating that grief can produce symptoms of pain as well.

Slide #36 PAG

D. Reward/(addiction?)

Slide #37: A reward factor with Grief?

O'connor, et al (2008)

**NA: nucleus accumbens** ~ associated with reward system

dACC ( dorsal anterior cingulated cortex), insula and periaqueductal gray (PAG) ~ associated with pain

1) [Does reward remain robust in grief, or does it subside? MH]

  **O'Connor (2008) proposes that the extended grief may describe the subset of "Complicated Grief" grievers and may be a function of the continuous activity of the Nucleus Accumbens (NA) and the reward function of the brain.**

  *Freed and Mann (2007) hypothesize that i****f the detachment model is correct, the pangs of grief would occur with reduced NA (Nucleus Accumbens) activity over time, as the salience of the cues decreases and acceptance of the reality leads to detachment. If the reunion model is correct, then the pangs of grief would continue to occur with NA activity, with reward activity in response to the cues motivating reunion with the deceased. This study demonstrates that each of these models may be accurate for distinct subgroups of bereaved individuals: CG and NCG.***

 Freed and Mann (2007) hypothesize that a **detachment model is correct for those whose NA activity reduces over time: the importance of the cues for reunion decreases and acceptance of the reality leads to detachment. For those whose NA activity continues, a reunion model is correct, with reward continuing as cues motivating reunion with the deceased continue.** Freed, et al. (2007) explain extended grief in terms of "excessive attention" of rACC.

**This study demonstrates that each of these models may be accurate for distinct subgroups of bereaved individuals: CG and NCG.**

The addiction-relevant aspect of this neural response may help to explain why it is hard to resist engaging in pleasurable reveries about the deceased even though engaging in these reveries may prevent those with CG from adjusting to the realities of the present (cf. **Knutson B, Adams CM, Fong GW, Hommer D** , 2001 Anticipation of increasing monetary reward selectively recruits nucleus accumbens. *Journal of Neurosci ence, 21,* 159).

Understanding the reward processes activated in those with CG could substantially change treatment of this disorder. Therapies such as behavioral interventions that target reward processes may confer benefit and preferentially aid in adapting to the loss (Shear et al., 2005). Likewise, dopaminergic interventions that alter reward sensitivity could theoretically be more effective in treating CG than serotonergic interventions, which have failed to alter grief intensity (**Zygmont, M., Prigerson, HG, Houck, PR, et al.** (1998). A post-hoc comparison of paroxetine and nortriptyline for symptoms of traumatic grief. *Journal of Clinical Psychiatry, 59,* 241-255.)

***Fisher, H., Aron, A., Strong, G., et al.*** *(2005). Motivation and emotion systems associated with romantic love following rejection: an fMRI study. Washington, DC: Society for Neuroscience.*

*The behavioral reactions of rejected lovers suggest that the dopaminergic reward system of the nucleus A-VP-P region accompanies reactions that are basic to separation from a loved one… The findings suggest that the neural mechanism activated following rejection is associated with elevated activity of dopamine, because this neurotransmitter produces heightened alertness, energy, and motivation ~ traits that abandoned creatures exhibit as they call for help and search for the source of their abandonment: their mother, sibling, or mate.*

Slide #38: Reward Pathways

*VTA = ventral tegmental area: a group of neurons at the very centre of the brain, plays an especially important role in the reward circuit. The VTA receives information from several other regions that tell it how well various human needs, are being satisfied.

Using dopamine, the VTA then forwards this information to* ***the nucleus accumbens****. The increase in the level of dopamine in the nucleus accumbens, and in* [*other brain regions*](http://thebrain.mcgill.ca/flash/i/i_03/i_03_cr/i_03_cr_que/i_03_cr_que.html)*, reinforces the behaviours by which we satisfy our fundamental needs.*

[*http://thebrain.mcgill.ca/flash/d/d\_03/d\_03\_cr/d\_03\_cr\_que/d\_03\_cr\_que.html*](http://thebrain.mcgill.ca/flash/d/d_03/d_03_cr/d_03_cr_que/d_03_cr_que.html)

*Septum: The septal region lies anteriorly to the thalamus. Inside it, one finds the centers of orgasm (four for women and one for men). This area has been associated with different kinds of pleasant sensations, mainly those related to sexual experiences.*

[*http://www.healing-arts.org/n-r-limbic.htm*](http://www.healing-arts.org/n-r-limbic.htm)

fMRI limitations (O'Connor)What fMRI studies don't show yet:

a) neurological changes during grief process; are there really "stages"?

b) where is "grief work" localized? Does it enhance or exacerbate pain?

4. What to do about it (interventions)?

Slide #39: "Normalizing: This is not depression" …

Clinical impressions: normalization seems to relax students concerned about the label of "depression" (anecdotal)

Slide #40 Therapist's couch ("Working through")

 Encourages expression of emotions, retelling the story

**Humphrey**, Keren. (2009). *Counseling strategies for loss and grief.* Traditional "working through" model.. (CBT?) Emphasis on "cognititions" more effective than emphasis on "emotions"

*Slide #41 Journaling: bereaved HIV partners*

**Pennebaker, JW, Mayne, TJ, and Francis, ME** (1997). Linguistic predictors of adaptive bereavement. *Journal of Personality and Social Psychology, 72,* 863-8871.

Writing that indicates cognitive change (?) is more effective than mere emotional catharsis…

n = 30 HIV neg partners of deceased partners

IV: change in word analysis from 1st to 2nd interview (12 month gap)

writing about "deepest feelings and thoughts" v "neutral topic"

negative emotionality ("angry," "sad," "wrong"), positive emotionality ("happy," joyful")…

 insight ("realize," "see," "understand"), causation ("because," "infer," "thus")…

DV: depression (CES-D), positive morale (Bradburn's 1969 Affect Balance Scale), Positive states of mind scale (Howitz, et al, 1988), Impact of event scale [items re death] (Horwitz et al 1979)

Results: The more that people increased in their use of insight and causal words, the less likely they were to ruminate about the death a year later. (p. 870)

*Slide #42 Existential Reconstruction*

Frankl's (1962) "tragic optimism"; Gillies and Neimeyer (2006) "new meanings"; Stark (1994) "sadder, but wiser"; Edmonds and Hooker (1992), "purpose in life"…

We are "hard wired" to reconstruct ourselves as a function of grief. Therapists can assist in this process.

**Gillies, James and Neimeyer , Robert A.**  (2006). Distress is not necessarily the enemy to be evaded or even the symptom to be alleviated. Rather, it is to be faced openly and honestly in the spirit of Frankl's (1962) fundamentally existential stance, which he "called tragic optimism."

The clinician's role in working with a bereaved client is to facilitate a reconstructive process in which meanings can be found or developed that help the client reshape his or her shattered world, restore a sense of order, promote new insight and personal growth, guide meaningful actions in response to the loss, and bring some degree of relief from the common and undeniable pain of grief. (p. 60).

**Stark**, Martha. \*(1994). *Working with resistance* [the failure to grieve]. Grieving means being able to sit with the horror of it all, the outrage, the pain, the despair, the hurt, the sense of betrayal, the woundedness; it means accepting one's ultimate powerlessness in the face of all this; and it means deciding to move on as best one can with what one has ~ sadder, perhaps, but wiser too. There is a kind of peace that comes with recognizing that things were as they were and are as they are. No longer does one need one's objects to be other than they are; no longer does one yearn for things to be different; no longer does one compulsively repeat the past in the present in the hope that perhaps this time it will be different. It means appreciating that one has what one has.

**Edmonds, S, and Hooker, K.** (1992). Perceived changes in life-meaning following bereavement. *Omega, 29,* 307-318.

 Purpose in life predicted to reduced distress.

Schwartzberg, S.S., and Janoff-Bulman , R. (1991) Grieving and the search for the meaning: Exploring the assumptive worlds of bereaved college students. *Journal of Social and Clinical Psychology, 10,* 270-288.

 Bereavement (vs no bereavement) predicted to lowered belief in a meaningful world, perception that the world was random and uncontrollable.

Slide #43 Dual Process Model

Therapists should help in both confrontation and avoidance !

**Stroebe** (2002) [question to Bowlby]; \*My argument [personal question put to Bowlby in 1988] went something like this: “Grief work is said to be a necessary and adaptive part of grieving, but rumination is known to be a maladaptive process. So how do we distinguish these processes—positive working through versus negative ruminating—from each other?” At the time, I was very disappointed by Bowlby’s carefully considered but concise reply: “I don’t know!”

**Stroebe and Schut** (1999)

**Dual-process model** (authors' amalgam)

We both grieve and don't grieve [we keep on going] at the same time…

 **Loss-orientation coping**: grief-work concept is relevant here: rumination, crying, yearning; pleasurable reminiscence, painful longing… time brings increasing positive affect… not a phase-model, but rather waxing-and-waning…

**Restoration orientation:** assessing "what needs to be dealt with" = mastering new tasks (e.g., finances, cooking, parenting, moving, new identity formation… each with accompanying emotions

**Oscillation:** a cognitive regulatory process that recognizes the person's choice to "take time off," to avoid, to suppress negative emotions.

Slide #44 Other approaches

Medication

**O'Connor, et al.** (2008) Reward (dopamine), rather than SSRIs

Understanding the reward processes activated in those with CG could substantially change treatment of this disorder. Therapies such as behavioral interventions that target reward processes may confer benefit and preferentially aid in adapting to the loss (Shear et al., 2005). Likewise, dopaminergic interventions that alter reward sensitivity could theoretically be more effective in treating CG than serotonergic interventions, which have failed to alter grief intensity (Zygmont et al., 1998).

 [cf. \*\*Fisher, et al (2005)… *Motivation and emotion…*  for similar suggestion]

**Reynolds, CF, Miller, MD, Pasternak, R, Frank, E, et al. (1999)** Treatment of bereaved related major depressive episodes in later life. A controlled study of acute and continuation treatment with nortriptyline and interpersonal psychotherapy.*American Journal of Psychiatry, 156, 202-208.*  **(**Cited in **Prigerson, et al.,**2008, Handbook, p. 175)

Nortriptyline is a second-generation [tricyclic antidepressant](http://en.wikipedia.org/wiki/Tricyclic_antidepressant).  it inhibits the reuptake of rorepinephrine (noradrenaline) and, to a lesser extent, [serotonin](http://en.wikipedia.org/wiki/Serotonin).

Interpersonal Psychotherapy (ITP) was selected because it addresses bereavement

n= 80Ss diagnosed with major depressive episode around death of a spouse (between 6 months before and 12 months after the death)

IV: a) nortiptyline with psychotherapy; b) nortriptyline alone; c) placebo and psychotherapy; d) placebo alone…

DV: a) level of depression (Hamilton depression scale); b) level of bereavement (Texas Revised Inventory of Grief, (Faschingbauer, Zisook, & DeVauln, 1987) and Inventory of Complicated Grief)..

Results: significant drug effect for depression; no effect of psychotherapy for depression ; mp effect of medication on level of grief; medication + therapy -> greatest treatment completion rate…

Summary: nortriptyline is effective in treating depression, but has no effect on reduction of grief symptomatology. No controlled trials yet of SSRIs. Authors conclude that grief and depression are different…

Meditation

 Yoga, relaxation training

**Arnette**, J. Kenneth. (1996). Lit review: positive effects of relaxation therapy on NK cell activity. Grief is a powerful source of psychological distress. Relaxation, systematic desensitization, medication, bio-feedback… (Theoretical; not an empirical study.)

**Melges**, Frederick T.; DeMaso, David R. (1980). .

Guided imagery: patient removes obstacles to grieving through reliving, revising, and revisiting events of the loss. Initially, the full yearning for the attachment and the emotions associated with the loss are reawakened, then the patient is helped to detach by undoing binds with the deceased, and finally, new choices that bridge the past to the future are reinforced.

**Wada**, Kaori and **Park**, Jeeseon. (2009). Integrating Buddhist psychology into grief counseling. *Death Studies, 33:* 657–683, 2009

…Buddhist psychology and Western models of grief are explored within the context of death and grief as part of life, grief as a process, balancing doing and being…

Slide #45: Honoring the grief

Accompany the griever (cf. Slide #22, above: existential growth)

Religious mourning rites

Secular memorials: Memorial days to visit cemeteries (secular/cultural)

Memorial structures (e.g., Viet Nam Wall memorial; difficulty establishing a suitable 9/11 memorial)

**Epstein, Robert; Kalus, Christine; Berger, Mike. et al.** (2006), The continuing bond of the bereaved towards the deceased and adjustment to loss. *Mortality, 11(3),* 253-269.

Challenges the hypothesis that adjustment to bereavement depends on detachment from the bereaved. Lit review includes the section, "Challenges to 'breaking the bonds' hypothesis."

**Fesler**, Ann (2006). *The girls who went away: The hidden history of women who surrendered children for adoption in the decades before Roe v. Wade*. New York: Penguin

 Studies that have examined the grief of relinquishing mothers have identified a sense of loss that is unique and often prolonged… Unlike the grief over the death of a child, the loss of a child through adoption has no clear end and no social affirmation that grief is even an appropriate response [Davis, Carol, 1995, Separation loss in relinquishing birthmothers,  *International Journal of Psychiatric Nursing Research, 1, no. 2,* 55-66]. [Fessler, p.208.]

**Zilberstein**, Karen. (2008). [Au revoir: An attachment and loss perspective on termination.](http://psycnet.apa.org/index.cfm?fa=search.displayRecord&id=203F4180-90DB-2979-55F8-3B031559D5E6&resultID=9&page=1&dbTab=all)

 *Clinical Social Work Journal, 36(3)*, 301-311.

 If attachments truly remain important throughout life, the developmental goal becomes interdependency rather than autonomy. And the therapeutic goal becomes object permanence rather than termination, with the ‘‘object’’ in this case being a relational object.

**Robert Kastenbaum (2004)** *On Our Way: The Final Passenger Through Life and Death* In chapter two, the author discusses "practicing death" as rituals are taught to children that allow us to rehearse our encounters with loss, separation, and death.

5. Suggestions from participants for future direction?

6. End

*Slide #46 Tears of Sadness/Joy?*

<http://www.youtube.com/watch_popup?v=hkGzqpGx1KU>