Study Title: Effect of Maternal Interpretation Biases on Child Anxiety and Related Responses

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Institutional Review Board Application ID :	15622-02 - (7499)
Title :	Effects of Maternal Interpretation Biases on Child Anxiety and Related Responses

Approval details for the Application Id: 7499

	Decision	Approver Name	Date	Comment
PI signature	Approved	Viana, Andres Dr.	12/29/2015	
DOR signature	Approved	Admin, IRB	01/05/2016	

Application Data for Application ID: 7499

Title	Effects of Maternal Interpretation Biases on Child Anxiety and Related Responses
Application Type	Revision
Review Type	Full
Expedite Code	Not Applicable
Exemption Code	Not Applicable
Research Reason	Other (Explain) :This application pertains to a federally funded project (7R21MH101309-03), which is in the process of being transferred from the University of Mississippi Medical Center (my former institution) to the University of Houston. However, because the grant is not yet at University of Houston, the "funded research" option cannot be selected as there is no Project ID assigned or transmittal in the U of H system.

Investigator Data for Application ID: 7499

PI Name	Is Pricipal?	Is Co-Investigator?	Is External?	Other Personnel Type?	Is Student?	Faculty Sponsor Name
Viana, Andres Dr.	Yes		No		No	Not Applicable
Alfano, Candice Dr.		Yes	No		No	Not Applicable
Manning, Kara Ms.			No	Other Research Personnel	No	Not Applicable
Alphonso, Naomi Ms.			No	Other Research Personnel	Yes	Not Applicable
Raines, Elizabeth Ms.			No	Other Research Personnel	No	Not Applicable

Revision application data for application Id: 7499

Question	Answer
1) Revision Description (check all that are appropriate)	Revision/Addition to currently approved List of Documents :130||134||129||131
2) Risk Involve:(Check One)	This revision does not increase risks to participants enrolled in this study. (For students, signature of faculty sponsor is required.)
3) Describe the proposed revision. If applicable, include a scientific justification for the revision (for example, changes in the study population).	In order to reduce participant burden, we have decided to replace our clinical interview, namely the ADIS-C/P, with a shorter, easier-to-administer clinical interview: The MINI International Neuropsychiatric Interview (i.e., the MINI). The MINI covers exactly the same number of disorders. The only difference between the measures is administration time. Because the MINI can be administered in a significantly shorter amount of time, we have revised (1) the recruitment script (2) the permission and assent documents, and (3) the recruitment script to indicate that session 1 is now expected to last approximately 2 hours (vs. approximately 3 hours). This is the only change being made to these documents. We expect this change will not only reduce participant burden but also facilitate recruitment efforts given the now shorter session 1. No other changes are requested.

Project Review Summary Data for Application ID: 7499

Question	Answer
4) State the specific research hypotheses or questions to be addressed in this study	The goal of this study is to examine the effects of maternal interpretation biases on child interpretation biases and child anxiety symptoms during an anxiety-provoking speech task. We are proposing to address these objectives using a sample of 130 children with anxiety disorders and their clinically anxious mothers. Specific aims are as follows: Specific Aim 1: To test the effects of positive interpretation bias training on maternal anxious behavior. 1.1: Clinically anxious mothers who are trained to interpret child-related ambiguous situations in a positive manner will exhibit reduced anxious behavior as rated by objective observers relative to clinically anxious mothers who do not receive interpretation bias training. Specific Aim 2: To test the effects of positive interpretation bias training on children's and mothers' perceptions of threat to an anxiety-provoking speech task. 2.1: Mothers trained to interpret child-related ambiguous situations in a positive manner will rate the speech task as less threatening than mothers who do not receive interpretation bias training. 2.2: Children of clinically anxious mothers who are trained to interpret child-related ambiguous situations in a positive manner will rate the speech task as less threatening than children of clinically anxious mothers who do not receive interpretation bias training. Specific Aim 3: To test the effects of positive interpretation bias training on children's anxious behavior, physiology, and performance during an anxiety-provoking speech task. 3.1: Children of clinically anxious mothers who receive positive interpretation bias training (vs. those who do not receive such training) will exhibit lower anxiety during the speech task, as evidenced by (a) lower observer-rated anxious behavior, (b) increased heart rate variability, and (c) better observer-rated performance during the speech task.
5) What is the importance/significance of the knowledge that may result?	Findings from this study have the potential to elucidate the specific role of maternal information processing factors in the expression of child interpretation biases associated with anxiety (McLeod et al., 2007). Thus, results may speak to parental cognitive processes implicated in the intergenerational transmission of cognitive risk for anxiety from parent to child. Finally, establishing that changes in maternal cognitive processes are specifically associated with changes in children's interpretation biases and related anxiety responses (across behavioral, emotional and psychophysiological domains) during anxiety-provoking situations may inform the development of effective prevention strategies (Field et al., 2008)—touted as essential to address early-developing problems like anxiety (Merikangas et al., 2010). Indeed, findings from this study may inform the potential use of cognitive bias modification interventions or other brief, targeted interventions with parents of children with anxiety disorders (or at risk for anxiety disorders).
6) Type of Subject Population (check all that are appropriate)	Adults,Children or minors (<18 in Texas and most states)
6.01) Expected maximum number of participants	200 mothers and 200 children.
6.02) Age of proposed subject(s) (check all that apply)	Children (3yrs-10yrs),Adolescents (11yrs-14yrs),Adults (18yrs-64yrs)
	Male and female children aged 8-12 with a primary diagnosis of anxiety

6.03) Inclusion Criteria:	based on the composite score from child and parent versions of the Anxiety Disorders Interview Schedule-IV: Children and Parent Versions (ADIS-IV: C/P; Silverman & Albano, 1996) who reside with their mothers will be eligible for this study. Further, given our interest in testing the effect of maternal interpretation bias modification on children's anxiety, inclusion criteria will also require mothers to score in the clinical range for anxiety symptoms on the Depression, Anxiety, and Stress Scales (Lovibond & Lovibond, 1995).
6.04) Exclusion Criteria:	Exclusion criteria for children will include: (1) physical disability impairing ability to use a computer; (2) IQ less than 80 (based on a short form of Wechsler Intelligence Scale for Children-IV); (3) reading comprehension composite less than 75 (based on the Wechsler Individual Assessment Test-III Reading Comprehension and Fluency subtests); (4) concurrent primary diagnosis of any non-anxiety disorder; (5) present use of treatment services for anxiety, including behavioral or pharmacological intervention; (6) danger to self/others; and (7) and non-English speaking child/parent. Exclusionary criteria for mothers will only include: (a) involvement in cognitive behavioral therapy (given the focus of CBT on patients' interpretations) and/or (b) changes in pharmacological treatment during the 12 weeks prior to enrollment.
6.05) Justification:	Because the proposed study examines the effect of maternal interpretation biases on child interpretation biases and child anxiety symptoms in children aged 8-12, such school-aged children will be included in the proposed study. This age range was specifically chosen as children age 7 and younger may lack critical cognitive skills that are central to the experience of anxiety (e.g., mental rehearsal of anticipated negative outcomes and/or consequences; Borkovec, 1994). Also, children under the age of 8 may show poor reliability on self-report measures. Given that peer influence dramatically increases in adolescence (Steinberg, 2005), an upper limit of 12 years was chosen in order to minimize the role of peers in child interpretation biases and maximize our ability to isolate the effects of parental interpretation biases on outcomes of interest. We are also excluding children with IQ scores < 80 and reading comprehension composite < 75 given the cognitive and reading demands presented by the computerized tasks. Likewise, children with a physical disability preventing them from using a computer are excluded. This study also focuses on mothers as 69-75% of caregivers are women, and female caregivers spend as much as 50% more time providing care to children than male caregivers (U.S. Census Bureau, 2012). A second consideration involved whether to include mothers receiving treatment for anxiety (psychosocial [e.g., CBT] or pharmacological). Due to the emphasis of CBT on thoughts (e.g., interpretation biases) and the effects of anxiolytics on anxious behavior, we chose to exclude mothers involved in psychosocial treatment for anxiety and/or mothers who underwent changes in pharmacological treatment during the 12 weeks prior to enrollment.
6.06) Determination:	Mothers who contact project staff will be provided with information about the study and screened for inclusion/exclusion criteria. Mothers who appear eligible will be invited for the first session. Upon arrival, consent (and assent) will be obtained. Consenting families will undergo an in person comprehensive psychosocial assessment including structured clinical interviews, child and parent questionnaires, and an abbreviated IQ and

	reading test.
7) If this study proposes to include children, this inclusion must meet one of the following criterion for risk/benefits assessment according to the federal regulations (45 CFR 46, subpart D). Check the appropriate box:	(404) Minimal Risk
8) If the research involves any of the following, check all that are appropriate:	Interview,Survey/Questionnaire,Behavioral Observation,Other (Explain) :Recording of children's heart rate.
9) Location(s) of Research Activities:	UH campus :All research activities will take place at the University of Houston. There are no other sites associated with this project.
10) Informed Consent of Subjects: Your study protocol must clearly address one of the following areas:	Informed Consent. Signed informed consent is the default. A model consent is available on the CPHS website and should be used as a basis for developing your informed consent document. If applicable, the proposed consent must be included with the application. (http://www.research.uh.edu/PCC/CPHS/Informed.html) ATTACH COPY OF PROPOSED CONSENT DOCUMENT

Research Protocol Data for Application ID: 7499

Question	Answer
11) Describe the research study design. (Describe the research methods to be employed and the variables to be studied. Include a description of the data collection techniques and/or the statistical methods to be employed.)	The study involves two sessions on separate days. All sessions take place at the University of Houston. All parent-child dyads will complete multi-method assessments of interpretation biases and anxiety disorder symptoms (and other forms of psychopathology). Clinically anxious mothers of children with anxiety disorders will be randomly assigned to either a computerized training paradigm that teaches them to interpret child-related ambiguous situations in a positive manner (n=65; "positive training" condition) or a neutral condition that does not train interpretation of such situations in either a positive or negative direction (n=65; "neutral" condition). Specifically, in the "positive training" condition, a child-related scenario will be presented on the computer screen (e.g. meet the teacher day). Two possible interpretations of the event are subsequently presented on the screen: a threatening and a non-threatening interpretation. Mothers will be asked to choose the most accurate interpretation of the event by pressing on the corresponding key on the keypad. Mothers will receive positive feedback and a brief explanation when they choose the positive interpretation explanation, and negative feedback and a brief explanation when they choose the negative interpretation explanation. Mothers randomly assigned to the neutral condition will not receive any feedback on their answers. Children will subsequently be asked to participate in an anxiety-provoking speech task. Prior to this task, they will have the opportunity to discuss how they will approach the task with their mother, and their mothers' behavior during this interaction will be coded. Following the discussion, children and mothers will be asked how threatening they perceive the task to be and will complete a second computerized assessment of interpretation biases to assess interpretation biases post-training. Finally, children's anxiety, heart rate, and performance on the task will be assessed.
	This study involves two sessions on separate days. During the first session, mothers and children will complete several paper and pencil questionnaires (attached) that ask questions about the child's thoughts, feelings, and

12) Describe each task subjects will be asked to perform.	behaviors. Mothers will also be interviewed about their child's mood and behavior using the the MINI International Neuropsychiatric Interview. Children will also complete a brief assessment of intellectual and reading ability using a short form of the WISC-IV (Vocabulary and Block Design) and two subtests of the WIAT-III (Reading Comprehension and Oral Reading Fluency), respectively. This session is expected to last approximately 2 hours. During the second visit (within two weeks of the first visit), mothers and children will complete a computer task (described in detail in attached document labeled "Measures") that will ask about relationships between words and sentences. Second, mothers will be randomly assigned to one of two groups. The first group will complete a computer task that will ask about relationships between words and sentences while receiving feedback about their responses. The second group will complete a computer task that will ask about relationships between words and sentences but will not receive feedback about their responses. After completing this task, mothers will be asked to complete the first computer task again. Third, mothers will be asked to talk with their child about how he/she will give a brief speech describing his/her family in front of a recording video camera. The child's heart rate will be monitored during the speech. This involves placing one sensor (electrode) on the child's right-side collarbone, one sensor on the child's left-side collarbone, and one sensor on the left side of your child's rib cage. This second session is expected to last approximately 1 hour.
13) Describe how potential subjects will be identified and recruited? (Attach a script or outline of all information that will be provided to potential subjects. Include a copy of all written solicitation, recruitment ad, and/or outline for oral presentation.)	Recruitment strategies will include the use of a multi-media advertising campaign targeting: (1) the Sleep and Anxiety Center of Houston (SACH); (2) mental health provider offices within the local community; (3) outpatient clinics throughout the Houston, TX metropolitan area; (4) community pediatric primary care clinics; (5) public/private schools and summer camps; (6) churches, community organizations and centers; (7) local colleges and universities; (8) coffee shops, bookstores, and grocery stores; and (9) direct outreach at local health fairs. Regarding number (1) above, information about the study (i.e., the study's flyer) will be posted on the SACH website, including contact information. Study flyers will also be posted in the waiting area for SACH and made visible to patients. Patients who ask SACH personnel about the study will be told to contact the number listed on the study's flyer. We will also do direct mailings of study information to households of children enrolled in surrounding school districts. Flyers/ advertisements will specifically recruit mothers and children with a range of clinical anxiety symptoms by specifying that we are looking for children and parents who are stressed, anxious, worried, nervous, or shy. Children who meet diagnostic criteria for a psychiatric disorder will be referred for appropriate treatment services.
	Recruitment materials will instruct interested individuals to call the laboratory for further information about the study. The mothers or female guardians of all prospective participants will be screened by phone (according to the inclusion and exclusion criteria described above), and informed about the basic study procedures. Those whose children appear to meet criteria for the study and who express an interest in participating will be invited to schedule a visit for the first session. Upon arrival, the nature and purpose of data collection will be explained to parents by a member of the research team.

14) Describe the process for obtaining informed consent and/or assent. How will investigators ensure that each subjects participation will be voluntary (i.e., free of direct or implied coercion)?	During this visit, mothers and children will also be asked to provide written informed consent and assent, respectively. In particular, mothers and their children will be informed that the purpose of this study is to examine how maternal personality characteristics influence children's behaviors and feelings. Mothers and children will be informed that the study will involve completing two assessment visits, and that both visits will take place in the PI's laboratory at University of Houston. Children (in the presence of their caregiver) and mothers will be informed that they will be asked to complete self-report questionnaires and interviews pertaining to the parent and the child's personality, behaviors, mood, and emotions. Mothers and children will also be informed that the assessment sessions will additionally involve having the mother and child complete computerized assessments of interpretation biases (one before the mother completes the interpretation bias training program, and one after), and the mother will be informed of her participation in the computerized training program. Finally, children will be informed that they will be asked to engage in a speech task, during which their heart rate will be monitored continuously. The procedures for collecting heart rate will be described in detail, including the need to adhere sticky sensors on the child's anterior left and right shoulders, and on the left rib cage below the pectoral muscle. Mothers and children will be informed that it is quite normal for electrodes to leave a slight ring on the skin for a few hours. In addition to being informed about the study procedures, mothers and children will be informed of the potential risks of participating, including that they may experience boredom, distress, discomfort, anxiety, frustration, or fatigue as a result of completing the questionnaires, interviews, computer and speech tasks. They will also be informed that they may withdraw their consent to participate at any time without negative consequences. Finally, participants will be informed verbally and in writing about the steps that will be taken to protect their confidentiality, as well as the limits of confidentiality. In particular, participants will be informed that any reports of child abuse or neglect (as well as abuse of the elderly) will be reported, as will the report of active suicidal or homicidal intent. Participants (both children and their parents/guardians) will have the opportunity to direct questions to the experimenter (as well as Drs. Viana or Alfano) to clarify any information provided in the informed consent document. Following the provision of written informed assent and consent, the child and her/his parent/guardian will be taken to separate rooms to complete their respective assessment measures (thereby ensuring the child's privacy as well as the confidentiality of her/his responses). At the end of the study, all participants will be given contact information for the laboratory.
15) Briefly describe each measurement instrument to be used in this study (e.g., questionnaires, surveys, tests, interview questions, observational procedures, or other instruments) AND attach to the application a copy of each (appropriately labeled and collated). If any are omitted, please explain.	Please see attached documents, labeled "Description of Child Measures" and "Description of Parent Measures," respectively. Additionally, there are two additional attachments, labeled "Child Measures" and "Parent Measures" which contain the actual child and parent questionnaires, respectively.

16) Describe the setting and mode for administering any materials listed in question 15 (e.g., telephone, one-on-one, group). Include the duration, intervals of administration, and amount of time required for each survey/procedure. Also describe how you plan to maintain privacy and confidentiality during the administration.	The data collection site is the PI's laboratory on the 4th floor of the Health and Biomedical Sciences Building (HBSB). This space consists of private individual and family assessment rooms, and computer testing rooms. All rooms have digital audio and video recording equipment to be used for on-site supervision as well as diagnostic reliability ratings. Consent as well as psychosocial, computerized, and psychophysiological assessments will be conducted in this setting. These rooms provide ample space for the research and administrative goals of this project.
17) Approximately how much time will be required of each subject? Provide both a total time commitment as well as a time commitment for each visit/session.	The total time commitment for this study is expected to be approximately 3 hours. Specifically, the first session is expected to last 2 hours and the second session is expected to last 1 hour.
18) Will Subjects experience any possible risks involved with participation in this project?	
18.01) Risk of Physical Discomfort or Harm	Yes: :On very rare occasions, participants may experience minor, temporary skin irritation at the site of electrode placements.
18.02) Risk of Psychological Harm (including stress/discomfort)	Yes: :Risks are minimal and entail possible boredom, fatigue, testing anxiety, and possible embarrassment or frustration if they find a task difficult. Parents and children will also complete behavioral inventories and interviews about the child's behaviors, feelings, and personality traits. Such inventories/interviews may include sensitive issues and could result in mild discomfort. Any discomfort experienced during assessments is expected to dissipate quickly after completion of the study. No other risks are anticipated. Mothers and children will be given ample opportunities for breaks and experimenters will be trained to be sensitive towards any participant who appears to be at all distressed. Assessments would be interrupted if a child becomes upset at any time, and the child's parent would then be consulted. Prior experience with children suggests that even mild upset in the form of task frustration is rare and has always been readily resolved by a conference between the child and his/her parent, who is on site at all times. Parents or children concerned about reactions to assessment procedures will be encouraged to discuss their concerns with research staff. Research staff (including the PI and Co-I) will be fully prepared to debrief participants at the end of the study and will answer any remaining questions regarding assessment procedures.
18.03) Risk of Legal Actions (such as criminal prosecution or civil sanctions)	No:
18.04) Risk of Harm to Social Status (such as loss of friendship)	No:
18.05) Risk of Harm to Employment Status	No:
18.06) Other Risks	No:
19) Does the research involve any of these possible risks or harms to subjects? Check all that apply.	Any probing for personal or sensitive information in surveys or interviews
	Interested participants will benefit by discussing with staff the results of the diagnostic evaluation, along with treatment recommendations, referral information, and book and website recommendations relevant to the child's diagnostic status (at no cost to them). Also, findings from this study may

20) What benefits, if any, can the subject expect from their participation?	inform the development of effective prevention strategies (Field et al., 2008)—touted as essential to address early-developing problems like anxiety (Merikangas et al., 2010). Specifically, results may inform the potential use of cognitive bias modification interventions or other brief, targeted interventions with parents of children with anxiety disorders (or at risk for anxiety disorders). Given the mild risks involved, the potential benefits to participants are thought to clearly outweigh the risks.
21) What inducements or rewards (e.g., financial compensation, extra credit, and other incentives), if any, will be offered to potential subjects for their participation?	Each mother-child dyad will be given $50 for participating in each session ($100 total per dyad if they complete both sessions). Payment will be in the form of a Target gift card. Children will also choose a small toy after completing each assessment session.

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Question	Answer
22) Will you record any direct identifiers, names, social security numbers, addresses, telephone numbers, patient or student ID numbers, etc.?	Yes: :The information collected in this study includes: the mother's name, address, social security number, phone number, email address, age, gender, race or ethnicity, marital status, income, education, and employment status; and the child's name, address, gender, and date of birth. We will safeguard against breaches of confidentiality by coding participant data by ID number rather than by name, and by keeping information linking these ID numbers to specific individuals in a locked file cabinet accessible only to project staff. Further, individuals will not be identified by name (nor will any identifying information be offered) when results from data are disseminated. The database will be password protected and only accessible to project staff. Prior experience indicates that these procedures are successful in maintaining confidentiality.
23) Will you retain a link between study code numbers and direct identifiers after the data collection is complete?	No:
24) Will anyone outside the research team have access to the links or identifiers?	No:
25) Where, how long, and in what format (such as paper, digital or electronic media, video, audio or photographic) will data be kept? In addition, describe what security provisions will be taken to protect these data (password protection, encryption, etc.). [Note: University of Houston policy on data retention requires that research data be maintained for a minimum of 3 years after completion of the project. All research data collected during this project is subject to the University of Houston data retention policy found at http://www.research.uh.edu/Home/Division-of-Research/Research-Services/Research-Policies/Access-to-and-Retention-of-Research-Data.aspx]	Subject confidentiality will be protected to the full extent required by law and applicable local, State and Federal regulations and guidelines. All paper-format data will be kept in locked files in the locked office (HBSB Room 475) of the project coordinator and accessible only to study staff, governmental agencies (e.g., NIH) and local convening authorities (e.g., UH IRB) for the purpose of audit regarding scientific validity and/or aspects pertaining to the ethical conduct of human clinical investigation. Electronic data will be kept in password- protected files and kept on the University's secure servers which meet all applicable federal and state standards for data privacy and protection. Upon completion of the study, data encryption procedures will be used to safeguard all files. Files will be kept for 7 years after study completion.

Analyses 1.1: Related to H1, scores on coding dimensions of maternal anxious behavior will be checked first for potential reduction or combination due to low frequency (i.e., not all codable behaviors are actually observed). If child sex effects on maternal behaviors are observed, child sex will be included as a covariate. Then, a two-group (positive training vs. neutral training), one-way MANOVA (5 DVs: manifest anxiety, passivity, promotion of avoidance, overprotection, and intrusiveness) will be used to examine the effects of the positive interpretation bias training paradigm on maternal anxious behavior during the parent-child discussion. If the MANOVA is significant, ANOVAs for each significant dependent variable will be conducted, controlling for Type I error using Holm's (1979) modified Bonferroni correction method (Jaccard & Guilamo-Ramos, 2002).
Analyses 2.1: Related to H2 and H3, Holm's (1979) modified Bonferroni-corrected independent-samples t-tests will examine mean group differences (positive training vs. neutral training) in child and maternal ratings of perceived threat prior to the anxiety-provoking speech task.
Analyses 3.1: Related to H4.1, coding of child anxious behavior will be first subjected to similar procedures described for H1 above. A two-group (positive training vs. neutral training) one-way MANOVA (4 DVs: facial expression, body movements, speech quality, and content) will be used to examine the effects of the positive interpretation bias training paradigm on child behavior during the parent-child discussion. If the MANOVA is significant, the follow-up procedures will be identical to those reported above (see Analyses 1.1.). To address H4.2, ANCOVAs (controlling for baseline RSA) will be used to examine between group (positive training vs. neutral training) mean differences in children's RSA. Finally, we will conduct independent-samples t-tests to examine mean group differences in overall observer-rated performance during the speech (H4.3).
Analyses 4.1: Related to H5, a hierarchical linear regression will be conducted using child anxiety during the speech task as dependent variable in order to examine child SoP diagnosis as a moderator of associations between maternal interpretation biases child anxiety symptoms. Predictor variables will be mean-centered. In the first step of the model, any necessary control variables will entered. In the second step, both maternal interpretation biases and child SoP diagnosis will enter the model as predictor variables. In the third step, a maternal interpretation biases X child SoP interaction term will enter the model as a predictor.