



Thank you for your request to our REL Reference Desk regarding evidence-based information about anxiety and social interaction. Ask A REL is a collaborative reference desk service provided by the ten regional educational laboratories (REL) that, by design, functions much in the same way as a technical reference library. It provides references, referrals, and brief responses in the form of citations on research based education questions.

The information below represents the most rigorous research available. Researchers consider the type of methodology and give priority to research reports that employ well described and thorough methods. The resources were also selected based on the date of the publication with a preference for research from the last ten years. Additional criteria for inclusion include the source and funder of the resource

Question: *What is the latest research on Anxiety/Uncertainty Theory and social interaction?*

Search Process

Key words and search strings used in the search: *anxiety theory AND social interaction; anxiety AND social interaction; uncertainty AND social interaction; anxiety AND social behavior*

Search databases and websites:

- Google Scholar (<http://scholar.google.com>)
- ERIC (<http://www.eric.ed.gov>)
- JSTOR (<http://www.jstor.org/action/showAdvancedSearch>)
- Institute of Education Sciences (IES) Resources: <http://ies.ed.gov>
- What Works Clearinghouse: <http://ies.ed.gov/ncee/wwc/>

Sample Citations Retrieved (NOTE: Abstracts and executive summaries are copied directly from the reports when possible to ensure accuracy):

Brown, M. A., & Stopa, L. (2008). The looming maladaptive style in social anxiety. *Behavior Therapy, 39*(1), 57-64

Summary/Abstract: This exploratory study examined the relationship between the looming maladaptive style (i.e., an enduring and trait like cognitive pattern to appraise threat as rapidly rising in risk, progressively worsening, or actively speeding up and accelerating) and three different aspects of trait social anxiety (i.e., fear of negative evaluation, social interaction anxiety, and public scrutiny fears) as well as general anxiety and depression. A large nonclinical, female-only sample (n=152) completed the Looming Maladaptive Style Questionnaire-II (Riskind, J. H., Williams, N. L., Theodore, L. G., Chrosniak, L. D., & Cortina, J. M. (2000). The



looming maladaptive style: Anxiety, danger, and schematic processing. "Journal of Personality and Social Psychology, 79," 837-852), which assesses two types of looming vulnerability: social (i.e., looming appraisals in response to potentially threatening social situations) and physical (i.e., looming appraisals in response to potentially threatening physical stimuli). Multiple regression analyses indicated that social looming uniquely predicted fear of negative evaluation, social interaction anxiety, and public scrutiny fears, accounting for 7%, 4%, and 3% of the variance, respectively. However, social looming did not predict depression. These findings support the looming model of anxiety and encourage further attention to the possible role of social looming as an anxiety-specific vulnerability factor in social anxiety.

Dyson, M. W., Klein, D. N., Olino, T. M., Dougherty, L. R., & Durbin, E. C. (2011). Social and non-social behavioral inhibition in preschool-age children: Differential associations with parent-reports of temperament and anxiety. *Child Psychiatry and Human Development*, 42(4), 390-405. doi: 10.1007/s10578-011-0225-6

Summary/Abstract: Behavioral inhibition (BI) has generally been treated as a unitary construct and assessed by combining ratings of fear, vigilance, and avoidance to both novel social and non-social stimuli. However, there is evidence suggesting that BI in social contexts is not correlated with BI in non-social contexts. The present study examined the distinction between social and non-social BI in a community sample of 559 preschool-age children using a laboratory assessment of child temperament, a diagnostic interview, and parent-completed questionnaires. Social and non-social BI were not significantly correlated and exhibited distinct patterns of associations with parent reports of temperament and anxiety symptoms. This study suggests that BI is heterogeneous, and that distinguishing between different forms of BI may help account for the variation in trajectories and outcomes exhibited by high BI children.

Erickson, T. M., & Newman, M. G. (2007). Interpersonal and emotional processes in generalized anxiety disorder analogues during social interaction tasks. *Behavior Therapy*, 38(4), 364-377. doi: 10.1016/j.beth.2006.10.005

Summary/Abstract: Persons with chronic worry and generalized anxiety disorder (GAD) report maladaptive social cognitions, interpersonal behaviors, and emotional regulation. Because research has neither investigated these processes in actual social situations nor explored whether they take heterogeneous forms, the present study provides the first attempt to do so in a laboratory investigation. GAD analogue participants and nonanxious controls interacted with confederates in an unstructured collaborative story construction task and an emotional disclosure task with standardized confederate behavior. In both tasks, relative to controls, some GAD analogues highly overestimated, whereas others markedly underestimated, their negative (Hostile-Submissive) interpersonal impact on confederates. Although GAD analogues, as a group, exhibited greater sad affect during disclosures than controls, their openness during



disclosures and liking by confederates varied with their level of misestimation of negative interpersonal impact. Results underscore the need to further explore interpersonal processes in chronic worriers and how they may exacerbate or maintain dysfunction.

Gudykunst, W. B., & Nishida, T. (2001). Anxiety, uncertainty, and perceived effectiveness of communication across relationships and cultures. *International journal of intercultural relations*, 25(1), 55-71. Doi: 10.1016/S0147-1767(00)00042-0

Summary/Abstract: Anxiety/uncertainty management (AUM) theory suggests that effectiveness of communication is a function of individuals' abilities to manage their uncertainty and anxiety. The effect of anxiety and uncertainty on perceived effectiveness of communication was examined in two relationships (strangers and close friends) and two cultures (United States and Japan) in the present study. The results indicate that there is a moderate, negative relationship between anxiety and attributional confidence (the inverse of uncertainty) across relationships and cultures. The results also reveal that anxiety negatively predicts perceived effectiveness and attributional confidence positively predicts perceived effectiveness across relationships and cultures. The present data, therefore, support the major axiom of AUM theory.

Hammer, M. R., Wiseman, R. L., Rasmussen, J. L., & Brusckke, J. C. (1998). A test of anxiety/uncertainty management theory: The intercultural adaptation context. *Communication Quarterly*, 46(3), 309-326. DOI:10.1080/01463379809370104

Summary/Abstract: Anxiety/Uncertainty Management theory, as formulated by Gudykunst and Hammer (1987a), proposes that intercultural adaptation outcomes are based on the two mediating dimensions of uncertainty reduction and anxiety reduction and sixteen secondary variables that systematically influence uncertainty and anxiety reduction. In this paper, the sixteen variables originally identified are categorized into four "fundamental factors"; (interpersonal salencies, intergroup salencies, communication message exchange, and host contact conditions). The present study examines this revised Anxiety/Uncertainty Management (AUM) theory of intercultural adaptation. A total of 291 international students at two universities in the United States participated in the study. The study found overall fit of the revised AUM theory vis-a-vis the two mediating factors of uncertainty and anxiety reduction, the importance of interpersonal salencies for uncertainty reduction, and the importance of host contact conditions for facilitating feelings of comfort and reducing anxiety. Intergroup salencies were significantly related to uncertainty reduction but not, contrary to expectation, to anxiety reduction. Communication message exchange (which consists of information gathering strategies and second language proficiency) was, again contrary to expectation, not significantly related to either uncertainty or anxiety reduction. Finally, cultural identity showed a small though significant negative relationship to intergroup salencies, suggesting a stronger, ingroup identity was associated with increased uncertainty. The paper concludes by proffering explanations for



the findings and suggestions for future research.

Krain, A. L., Hefton, S., Pine, D. S., Ernst, M., Castellanos, X. F., Klein, R. G., & Milham, M. P. (2006). An fMRI examination of developmental differences in the neural correlates of uncertainty and decision-making. *Journal of Child Psychology and Psychiatry*, 47(10), 1023-1030.

Summary/Abstract: Maturation of prefrontal circuits during adolescence contributes to the development of cognitive processes such as decision-making. Recent theories suggest that these neural changes also play a role in the shift from generalized anxiety disorder (GAD) to depression that often occurs during this developmental period. Cognitive models of the development of GAD highlight the role of intolerance of uncertainty (IU), which can be characterized behaviorally by impairments in decision-making. The present study examines potential developmental differences in frontal regions associated with uncertain decision-making, and tests the impact of IU on these circuits. Methods: Twelve healthy adults (ages 19-36) and 12 healthy adolescents (ages 13-17) completed a decision-making task with conditions of varied uncertainty while fMRI scans were acquired. They also completed measures of worry and IU, and a questionnaire about their levels of anxiety and certainty during the task. Combined group analyses demonstrated significant linear effects of uncertainty on activity within anterior cingulate cortex (ACC). Region of interest (ROI)-based analysis found a significant interaction of group and IU ratings in ACC. Increased IU was associated with robust linear increases in ACC activity only in adolescents. An ROI analysis of feedback-related processing found that adolescents demonstrated greater activation during incorrect trials relative to correct trials, while the adults showed no difference in neural activity associated with incorrect and correct feedback. This decision-making task was shown to be effective at eliciting uncertainty-related ACC activity in adults and adolescents. Further, IU impacts ACC activity in adolescents during uncertain decision-making, providing preliminary support for a developmental model of GAD.

Morgan, J., & Banerjee, R. (2006). Social anxiety and self-evaluation of social performance in a nonclinical sample of children. *Journal of Clinical Child and Adolescent Psychology*, 35(2), 292-301. doi: 10.1207/s15374424jccp3502_13

Summary/Abstract: In an investigation of socially anxious children's social behavior and self-evaluation, 28 high socially anxious and 28 low socially anxious children, ages 11 to 13 years, appraised their performance before and after participating in a role-play task. Half of the children were given video feedback prior to giving their post task self-evaluations. High socially anxious children anticipated poorer performance on the role-play task, and some group differences in observed social performance were evident. Self-evaluations from video feedback only improved for the high socially anxious children who displayed more eye contact, gave longer verbal responses, and used more constructive verbal strategies in the role-play scenarios.



Rork, K. E., & Morris, T. L. (2009). Influence of parenting factors on childhood social anxiety: Direct observation of parental warmth and control. *Child & Family Behavior Therapy*, 31(3), 220-235. doi: 10.1080/07317100903099274

Summary/Abstract: The purpose of the present study is to determine the association of parenting behaviors and social anxiety in children. Three parental factors--including parental socialization, control, and warmth--were investigated in a sample of 31 two-parent families. Rather than solely relying upon retrospective questionnaires, this study incorporated direct observation and a Daily Activity Log to assess the qualities of social interaction. Moderate associations between parental control and child anxiety symptoms were found, with no support for the association between parental warmth and child anxiety. More specifically, maternal overprotection and observed negative commands related to child social anxiety, and paternal overprotection related to child general anxiety. Several gender differences were found regarding the impact of parent behaviors on child anxiety. Implications, limitations, and future directions are discussed.

Teachman, B. A., & Allen, J. P. (2007). Development of social anxiety: Social interaction predictors of implicit and explicit fear of negative evaluation. *Journal of Abnormal Child Psychology*, 35(1), 63-78. doi: /10.1007/s10802-006-9084-1

Summary/Abstract: Little is known about how to predict which individuals with known temperament vulnerabilities will go on to develop social anxiety problems. Adolescents (N = 185) were followed from age 13 to 18 to evaluate psychosocial, prospective predictors of social anxiety symptoms and fears of negative evaluation (FNE), after accounting for pre-existing social withdrawal symptoms. Results from structural equation modeling suggest that lack of perceived social acceptance predicts subsequent "explicit" social anxiety and FNE, whereas the emotional intensity of close peer interactions predicts subsequent "implicit" FNE. Results are discussed in terms of the importance of peer interaction in the development of social anxiety, and the value of measuring both implicit and explicit FNE.

Referrals

Organizations:

- Anxiety and Depression Association of America: <http://www.adaa.org>
- Social Anxiety Association: <http://www.socialphobia.org>

Federally Funded Resources

- US Department of Education, Institute of Education Sciences (IES) Resources, <http://ies.ed.gov>



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- What Works Clearinghouse, <http://ies.ed.gov/ncee/wwc/>

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