1046-60-560 **Thomas B Fowler*** (tfowler@noblis.org), 3150 Fairview Park Drive, Falls Church, VA 22042.
*Emergence of Heavy-Tailed Behavior and the Failure of the Central Limit Theorem Due to Hypercorrelation.*

Heavy-tailed distributions have become very important in fields as diverse as telecommunications and economics. They often occur in situations where one would expect that the Central Limit Theorem should apply. This research investigates why the Central Limit Theorem fails, and shows one mechanism by which heavy-tailed behavior can arise. This is by addition of what the research defines as "hypercorrelated" random variables. The research also shows that heavy-tailed behavior cannot arise due to addition of linearly related random variables. (Received September 08, 2008)