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The impact of religious experiences on human cooperation, including the felt presence of or intimacy with God or other supernatural beings, has received far less attention by the evolutionary-cognitive science of religion (ECSR) than either the disposition to believe in such beings or the ritualized behaviors that attend these beliefs. We hypothesize that ecstatic, high-arousal religious experiences have adaptive benefit in motivating individuals to overcome commitment barriers by serving as autonomically-mediated, “hard-to-fake” signals of cooperative commitment. In the present study, we recruited 34 Pentecostal/Charismatic Christians (“PCC”; 72 female; mean age= 19.8yrs, SD=1.08 ) and 143 Evangelical Christians (“EC”; 17 female; mean age= 26.5yrs, SD=1.8) from college ministries in Santa Barbara, California. While Pentecostal/Charismatic and Evangelical Christianity are traditions with many overlapping beliefs, values, and practices, PCC is distinct from EC for its emphasis on direct, personal experience with God in the form of ecstatic manifestations. We employed a 2 (Religious Tradition) x 2 (Group Activity) x 2 (In/Out Group) mixed design to test the hypothesis that ecstatic religious experiences have adaptive benefit in motivating individuals to overcome commitment barriers to cooperation by serving as autonomically-mediated, hard-to-fake signals of commitment. We predicted that 1) measures of cooperation across standard economic games would be associated with PCC religious worship, and 2) PCC worship would correlate with self-reported state measures of religious experience, including felt intimacy with the divine. No prior hypotheses were made about cooperative behavior towards in- versus out-group members.

### **Results:**

State and trait measures of religious commitment, empathic concern, felt closeness to other group members and to God, and positive mood, and daily/yearly charismatic experiences were significantly higher for members of PCC versus EC traditions. Although these measures were highly correlated religious tradition (PC Christians being higher in all of these), 2-way ANOCOVAs were conducted for each dependent measure to determine if trait/state measures had an additional effect on cooperation. There were no significant main effects of these state/trait variables or significant interactions with treatment (Folk or Worship Songs) or population (PC or EC Christian). Therefore, none of these state/trait variables further explains any variance of cooperation in the economic games. Rather, cooperation is predicted by religious tradition (i.e., PC) or an interaction between religious tradition x treatment (i.e., PC worship).

Planned contrasts analyses (one-tailed) were conducted to compare PC worship with PC folk singing, EC worship, and EC folks singing. Pentecostal-Charismatic Christians who worshipped together were significantly more cooperative across all measures than Evangelicals in both the worship or folk singing condition. PCC worship was also significantly higher than PC folk-singing on two measures. Furthermore, both Pentecostal-Charismatic and Evangelical Christians were significantly more cooperative than typical non-religious undergraduates. [Exact statistics TBA in talk]. These results support the idea

that ecstatic religious experiences play a unique role in evolution of human cooperation, and can help to explain the persistence and success of ecstatic, experience-centered religious traditions, including one the largest and fastest-growing traditions in the world: Pentecostal/charismatic Christianity.