Introduction

- Interpersonal synchrony is the alignment of interacting individuals’ behavior, thought, and speech patterns.
- Research on synchrony has supported a view of synchrony as:
  - central to effective communication (Shockley et al., 2003);
  - evolving naturally from joint goals (Richardson et al., 2009);
  - linked to liking, empathy, and theory of mind (Ramseyer & Tschanzer, 2008).
- Previous synchrony research almost exclusively employs affiliative or affect-neutral tasks with little to no emphasis on conflict.

Findings about conflict in social psychology suggest:
- a consistent link to hostility and anger (Bell & Song, 2005; Charles & Carstensen, 2008);
- liking is essential to overcoming biases in conflict resolution (Frantz & Janoff-Bulman, 2000);
- perspective-taking leads to increased liking and understanding but is difficult during conflict (Frantz & Janoff-Bulman, 2000).

The present study examines how argument affects interpersonal behavioral synchrony as measured by gross body movement, which is considered a fundamental channel of behavioral synchrony (Boker et al., 2002; Ramseyer & Tschanzer, 2008; Shockley et al., 2003). We hypothesize that synchrony will decrease during arguments but that increased liking may mitigate this effect.

Methods

- N = 20 self-selected dyads (1 removed due to experimenter error).
- Individual participants completed opinion surveys and rated strength of belief.
- Range of items were given, including:
  - political topics (e.g., war in Iraq, universal health care, tax rates);
  - sociopolitical topics (e.g., death penalty, abortion).
- Dyads recorded in profile using high-definition digital camcorder while holding 2 conversations.
  - Affiliative: prompted to discuss media (e.g., TV shows, music) that both enjoy.
  - Argumentative: prompt based on answers to opinion survey.
- Randomly assigned to first conversation to control for order effects.
- Participants rated how much they liked their partner after each conversation.

Analyses

- Participant videos sampled in regular intervals (8 Hz).
- MATLAB program was written to analyze participant movement and synchrony as an alternative to hand-coding. Briefly, the program:
  - halves frames to capture one participant per half-frame;
  - registers movement as pixel changes across sequential half-frames;
  - converts gross movement into percent of pixels per half-frame;
  - computes synchrony as co-occurring movement within the dyad by cross-correlating the movement of the participants.
  - The cross-correlation coefficient (r) of the conversation reflects interpersonal synchrony of gross body movements, or the extent to which the dyad moves together in time.
  - Created a linear mixed-effects model for synchrony (r) using R.
  - Random effects: dyad, participant.
  - Fixed effects: conversation type (argumentative, affiliative), conversation number (first, second), time slice, liking ratings.
  - Excluded three- and four-way interactions.

Results

- Main effects
  - Conversation number: Model predicts an increase in r by 0.0533 during the second conversation (p < 0.002).
  - Conversation type: Model predicts a drop in r by 0.1393 during argument (p < 0.001).
  - Time slice: Model predicts an increase in r by 0.0004 during each consecutive time slice (p < 0.001).
  - Liking: Not significant (estimate = -0.0198; p = 0.1492).
  - Interaction effects
    - Conversation number x Conversation type: See plot; estimate = -0.1185 (p < 0.02).
    - Conversation type x Liking: See plot; estimate = -0.0087 (p < 0.005).
    - Conversation number x Liking: Synchrony for high-liking group decreased during second conversation but increased for low-liking group; estimate = -0.0292 (p < 0.001).
    - Conversation number x Time slice: Synchrony across time significantly higher with more variability in first conversation; estimate = -0.0006 (p < 0.001).
    - Conversation type x Time slice: Synchrony across time higher in affiliative conversations; estimate = 0.0005 (p < 0.001).
    - Liking x Time slice: Not significant (estimate = 0.0001; p = 0.2642).

- While preliminary, our study provides a first glimpse into how interpersonal bodily synchrony functions during conflict.
- Results indicate argument may increase demands on dyads, evidenced by decreased synchrony compared to affiliation.
  - Consistent with findings from conflict literature and hypothesis.
  - Suggests that dyads who initially affiliate may have difficulty coping with switch to argument but that the reverse transition is much easier.
  - Differences among dyads may affect bodily synchrony during argument.
    - Higher liking linked with higher synchrony during argument.
    - Again, consistent with conflict literature and hypothesis.
  - Appears to be greater variability in synchrony during argument.
    - Suggests wider variety in response to argument than to affiliation.
    - However, lack of main effect for liking contradicts synchrony literature.
    - Unsure of cause.
    - May be due to choice of statistical analysis.
    - Simple regression yielded positive synchrony-liking link.
  - Future directions:
    - Examine arguments (quantitatively and qualitatively) for different patterns of responses.
    - Compare automatic synchrony analysis with traditional methods to confirm effectiveness.

References