McKenna Bradley

Dynamic Affective Synchrony in Marital Dyads: Associations with Satisfaction and Attachment

Oklahoma State University

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Background

Forty to fifty percent of marriages in the United States end in divorce (American Psychological Association, 2013). Children of all socioeconomic statuses are impacted decades after experiencing parental divorce. The negative affects often last through their thirties (Fischer, 2007; Friesen, Horwood, Fergusson, & Woodwar, 2017). Strong correlations have been drawn between divorce and health, including liver diseases, cancer, depression, and psychosomatic symptoms (Lacey, Kumari, & McMunn, 2013; Huurre, Junkkari, & Aro, 2006). On average, divorce costs the United States about $33.3 billion every year with direct and indirect costs (Schramm, 2006). It is our benefit as a society to reduce the number of divorces.

What, then, is causing people to struggle so much in their relationships? What is making people in committed relationships so unhappy? Many couples experience conflict and arguments. What seems to differ between couples is how they respond and react during those arguments. In some couples, when one partner perceives negative emotion in their partner, they tend to react with more hostile and defense behavior, which has been shown to increase stress (Overall, Fletcher, Simpson, & Fillo, 2015). Among other couples, one partner may be able to remain calm rather than become reactive when their partner responds with negative behaviors, and this ability to not react has led to more marital unity (Parise, Donato, Pagani, & Schoebi, 2017). In synchronous couples, one's affect (emotion) tends to change along with their partner's affect. Other couples—nonsynchronous or asynchronous—tend to have little or no influence on how their partner responds in conversation.

One of the most frequent complaints in marriages that lead to divorce is that individuals feel they have "grown apart" from their partner or that they are not able to talk together (Gigy & Kelly, 1993; Amato & Previti, 2003; Hawkins, Willoughby, & Doherty, 2012). In marriages, we want people growing together rather than growing apart. It has been shown that partners' emotions influences both partners' behaviors in conversation (South, Doss, & Christensen, 2010). One way couples might be able to improve their chances of success in marriage is by enhancing emotional connectedness, or emotional synchrony.

Synchrony

The ways married couples feel and behave during conversations with each other might be predicted by the way their partners feel and behave. When one partner expresses negative affect, or emotion, the other partner might express more negative affect to match them. Similarly, when one partner shows more positive affect, like affection and warmth, toward their partner, the partner might reciprocate positive affect. This idea is known as synchrony, and it is common among marital interactions. Synchrony can be physiological, behavioral, or affective.

Physiological synchrony is displayed in heart rate, skin perspiration, and rate of breathing. In conversation, if physiological synchrony is present, as one partner's heart rate increases, the other partner's will increase, as well. Synchrony can also work the other way—as one partner's heart rate decreases, the other partner's tends to decrease in response.

Behavioral synchrony follows the same idea as physiological synchrony, but it involves that which can be observed in couples. The behaviors a partner uses in conversations can influence the other partner to act or behave in a similar manner. For example, one partner crossing their arms and rolling their eyes during a conversation may elicit a similar response in

their partner. Therefore, as one partner's behaviors change during a conversation, the other partner's behaviors are likely to change.

An aspect of synchrony that is researched less commonly is affective synchrony. This type of synchrony occurs when one's affect, or emotions, whether positive or negative, impacts their partner's affect. When a conversation causes one partner to change to a different affect, their partner is likely to change their own affect in response. These types of patterns in marital conversations tend to occur because partners are influenced by the specific discussed topic and by the way their partner reacts in the discussion. For example, if a couple begins arguing over a problem that they cannot agree on, one partner might begin to feel angry or contempt toward their partner. In response to those changes in emotion, their partner may also begin to feel anger or defensiveness. In this way, each partner's affect influences the other's affect. Marriages in which affective synchrony is present contains two partners whose emotions are positively or negatively affected by their partner's emotions during interactions.

Previous Research

Synchrony. There has been a lot of research on parent-child synchrony, but research on affective synchrony within romantic relationships has remained limited. Some investigators have examined the relationship between affective synchrony and relationship factors, such as conflict, stress, or communication patterns. One such study examined negative affective synchrony in 64 couples that were not receiving marital treatment (Davis, Haymaker, Hermecz, & Gilbert, 1988). These researchers investigated whether negative affective synchrony is present among couples who do not report distress, when compared to distressed couples. The participants in this study reported their affect before engaging in high-conflict verbal interaction and immediately after,

reflecting back on their affect during the interaction. During the conversation, heartbeat and perspiration measures were taken into account for physiological synchrony. Results suggest an interaction-dependent factor (like affective synchrony) is at play, because there existed many correlations along multiple time points, rather than one consistent correlation, as would be expected in a one-dimensional factors, like temperament (Davis, Haymaker, Hermecz, & Gilbert, 1988). This study argues that one partner's affect might influence the other partner's affect during conversation.

Job stress among police officers was used to assess affective synchrony between the officers and their wives (Roberts, Leonard, Butler, Levenson, & Kanter, 2013). Participants reported their job stress and marital stress in a daily diary for one week and then participated in a 15-minute discussion on how their day went. Participant emotional behaviors were coded in 30-second periods for hostility—including anger, contempt, criticism, defensiveness, domineering behavior, and irritability—and affection—including affectionate behavior, humor, and warmth. Results showed that when officers felt more job stress, they reflected less hostility synchrony and more affection synchrony with their wives. However, their wives reported more synchrony with their husband's hostility and less synchrony with their affection. This suggests the husbands, when under more job stress, are more attuned with their wives' affection behaviors and less with their hostility behaviors, while wives focused more on their husband's hostility than their affection. In this study, affective synchrony can be in regards to affection or to hostility.

A different study examined affect behavior in same-sex and opposite-sex couples (Darling & Clarke, 2009). Researchers asked the participants to talk about planning a vacation with their partner for 5 minutes. Each participant reviewed the recording of the conversation separately and rated their affect and behavior and their partner's affect and behavior in 20-second

periods. Sudden changes in affect were strongly related to conflict and giving in during the conversation. Additionally, when one partner reported higher levels on certain negative behaviors (like giving in) the other partner tended to report lower levels. This finding suggests asynchrony exists in couples' interactions.

Attachment. Attachment is a widely used relationship variable in the social sciences, and there are a few different ways of examining it. One study compared two different attachment assessments—the Adult Attachment Interview (George, Kaplan, & Main, 1996) and the Current Relationship Interview (Crowell & Owens, 1996)—and examined attachment's relationship with other marital factors, like satisfaction and conflict (Treboux, Crowell, & Waters, 2004). They found that those who were considered securely attached according to both measurements reported the most relationship satisfaction, the most confident in themselves, and less relationship conflict. On the other hand, those who were insecurely attached (either dismissive or preoccupied), according to both attachment measures, reported the most conflict and greater avoidance of closeness. However, these individuals did not tend to consider their relationship conflicts as very emotionally significant.

The Adult Attachment Interview (AAI; George et al., 1996) is one common tool used to measure attachment style and behavior among 140 young couples (Cassidy, Jones, & Shaver, 2013). Secure attachment in women was related to more positive behavior during couple discussion than dismissing or preoccupied women. In men, dismissive and preoccupied attachment predicted more negative behaviors than those who were securely attached. These findings suggest there are significant relationships between these three types of attachment—secure, preoccupied, and dismissive—and an individual's behavior during couple conversation.

The Adult Attachment Behavior Q-Set (AABQ; Wampler, Riggs, & Kimball, 2004) is an extension of the AAI. This attachment measure seeks to use interview-based measures in addition to self-reports. A recent study used the AABQ to examine attachment and affective factors among men and women in romantic relationships (Sesemann, Kruse, Gardner, Broadbent, & Spencer, 2017). They found that secure attachment among women correlated with less time spent in reported negative affect during the supportive conversation. On the other hand, female preoccupation attachment predicted less negative affect and less affective flexibility in the problem-solving discussion. In regards to female dismissive attachment, those with higher scores showed more negative affect during the supportive conversation. These findings show that secure, preoccupied, and dismissive attachment styles each play a role in couples' affective experiences.

The Current Study

Low affective synchrony may create a lack of unity and understanding among couples, leading to serious problems, like divorce. This study proposed to examine the association between affective synchrony and relationship satisfaction. It is hypothesized that during both the negative and positive discussions, more synchronous couples will report higher relationship satisfaction, while asynchronous and nonsynchronous couples will report less relationship satisfaction. The study also explored the role attachment security plays in whether couples are synchronous. It was hypothesized the more synchronous a couple is in the negative and positive conversations, the more relationship security the partners report.

Methods

Twenty-three heterosexual married couples were recruited for this study with a mean age of 31.7 years. The sample was comprised of 82.6% Caucasian, 6.5% Mexican-American, 4.3% African American, and 2.2% Puerto Rican participants. The length of participants' marriages ranged from 7 months to 30 years, with the majority having been married between 3 and 10 years. Participating couples reported having no children (30.4%), 1-2 children (47.8%), 3-4 children (17.4%), and 5 or more children (4.3%).

Couples were placed together in a room and asked to share with one another an incident when they felt hurt by their partner. After 10 minutes had elapsed, a knock at the door indicated that partners were to open up an envelope prompting them to share with one another a time when they felt cared for or supported by their partner. Couples continued this discussion for 7 minutes. Following the discussion, participants reviewed the video of their interactions and continuously rated their affective experiences using a continuous response measure (measured at every 100th of a second).

Affect variables were developed using GridWare, a software program designed to generate state space grids for dynamical analyses of continuous data. Variables denoting affective synchrony or asynchrony were created using GridWare and will be analyzed using statistical software. In short, we created regions of synchrony, asynchrony, and non-synchrony in state space grids of couples' affective experience (See Figure 1 and Figure 2). We then examined time spent by the couple in each of these regions, and examined the relationship between those durations and variables such as relationship satisfaction and attachment. Preliminary findings suggest a relationship between affective synchrony and relationship satisfaction, in that the more

synchronous a couple is, the higher their relationship satisfaction. Attachment security and insecurity also seems to be related to affective synchrony.

Attachment was assessed using the Adult Attachment Behavior Q-Set Revised (AABQ-R) developed by Wampler, Riggs, & Kimball (2004). This measurement is a 80-item Q-sort that looks at individual's behaviors in couple interactions. Correlations between those behaviors and the three attachment styles—secure, preoccupied, and dismissive—were assessed, so that each individual was given three correlations. These correlations determined how close to each attachment style a person is. In this study, those attachment correlations were correlated with the synchrony factors to examine the relationship between attachment and affective synchrony.

Results

Considering the relationship between positive affective synchrony (i.e. both partners reporting positive affect) and relationship satisfaction, there emerged a significant relationship. Upon closer examination, only a few outliers seemed to influence association, suggesting there was not a significant association between affective synchrony and relationship satisfaction in this sample. Similarly, attachment seemed to be associated to synchrony and asynchrony, such that those who were synchronous were more securely attached, and those who were asynchronous (where one partner reported positive affect and the other partner reported negative affect) or synchronous-negative (where both partners reported low affect) were more insecurely attached. Unfortunately, these findings turned out to be dominated by outliers, as well. Future research should use a larger sample to see if a significant correlation does exist between these relationship variables.

Some correlations existed between affective synchrony and attachment factors. In the positive discussion, male secure attachment was negatively related to asynchrony-male positive. This means that when a husband has high affect while the wife has low affect during the positive discussion, the men are less likely to show secure attachment behaviors. This finding suggests that asynchrony may indicate some insecure attachment in the relationship. Asynchrony-male positive was also related to male dismissive behaviors. In other words, men who have high affect while their wives have low affect during the positive discussion are more likely to use dismissive-attachment behaviors. These types of behaviors were observed by trained coders who characterized them as more dismissive behaviors.

Discussion

This study explored relationships between couple affective synchrony and marital factors, such as attachment behaviors and marital satisfaction. We found that asynchrony-male positive during the positive conversation was negatively related to male secure attachment, meaning for the couples in which the male reported higher affect and the woman reported lower affect in the positive discussion, the male was significantly less likely to show secure attachment behaviors. This also might be explained by males' tendency to compartmentalize their emotions. During the positive conversation, females may still be thinking about the negative conversation, and therefore would rate their affect lower, whereas males may more be able to disregard emotions from the negative conversation and emotionally respond only to the conversation at hand (i.e. the positive conversation). This might lead to the males not emotionally connecting with or understanding their wives, which would could result in less secure attachment behaviors. It is interesting that male secure attachment behaviors were not correlated with synchrony-positive—when both male and female reported high affect—during the positive conversation.

Results revealed a positive relationship between asynchrony-male positive male dismissive behaviors during the positive conversation. This indicates that when males reported higher affect and females reported lower affect during the positive conversation, males showed more dismissive behaviors. This finding might be explained by men's tendency to use more avoidance coping (Ward, Bergner, & Kahn, 2003). Previous research has shown that one reason men tend to withdraw is in response to a demanding or negative wife (Afifi, McManus, Steuber, & Coho, 2009; Holley, Strum, & Levenson, 2010). This idea can be supported in our findings, because as women have more negative affect and demand, their husbands likely withdraw (i.e. show dismissive behaviors) rather than decrease in affect with them. As our results showed, men who had higher affect and whose wives had lower affect during the positive discussion were more likely to show dismissive behaviors.

Limitations. Amidst all the correlations that were run in our study, we did not find much that was significant. Some of the associations found in our research were heavily influenced by a few outliers, suggesting no significant relationship really existed. This might be due to the small sample size we used. Future research should use a larger sample size in order to see whether synchrony truly has a significant effect on attachment and satisfaction. There may be some other limitations of this study. Perhaps synchrony should be measured a different way. Rather than measuring whether both partners spent more time in high affect or low affect, it might be more beneficial to look at exact instances partners affect changed. For example, it might be better to examine each 30-second period affect report to determine if both partners in a couple changed their affect together. It's possible that one partner spends more time in negative affect and one more time in positive affect, but if both partners increase or decrease affect at the same time with one another, that might be a better predictor of synchrony.

Another limitation to the study could be that synchrony might not be measuring what we want it to measure. Synchrony, as stated before, is the degree to which partners emotionally respond with each other. We wanted synchrony to measure healthy communication patterns within couples. However, it is possible that healthy communication is more about understanding how one's partner responds, rather than responding with them. For example, one partner may become upset easily, but, rather than trying to cheer them up, maybe the other partner allows them to remain upset for a while, knowing the partner tends to bring their affect back up themselves. This type of relationship, where both partners understand how the other responds emotionally and behaviorally, could possibly indicate more healthy communication patterns than a synchronous relationship. In this way, it is possible that healthy communication patterns among couples could be related to relationship satisfaction or attachment behaviors, just not in the way we measured healthy communication.

Implication. There are, however, several strengths of this study. Attachment was measured observationally, rather than self-reported. The AABQ-R is an observational method of measuring attachment, because it requires trained coders to categorize behaviors into three different types of attachment—secure, preoccupied, and dismissive. Observational measurements tend to be more accurate than self-report data. Another strength of our study is seen in the fact that, despite the sample size used, significant results were discovered.

Additionally, the results of the study suggest there is value in examining both positive and negative conversations among couples. As stated before, participants in this study were asked to engage in negative conversation for 10 minutes, where they discussed with each other a time they felt hurt by their partner. Then they discussed about a time they felt cared for by one another for 7 minutes (positive conversation). The value of gathering data from both positive and

negative conversations is seen in the results of this study. The correlations found were not true in the negative discussion, but became visible in the positive conversation. In other words, attachment behaviors and affective synchrony were not related during the argumentative discussion but were related during the positive conversation. If the researchers only looked at the negative discussion, these correlations may not have become visible.

This study points to a few recommendations for future research. If this study were replicated, it would need a larger sample size. As previously stated, there were significant correlations found despite the small sample size, but a larger sample size would show that those correlations truly are significant. A larger sample size would also show whether our other correlations really were controlled by outliers or if significant relationships exist among synchrony and satisfaction.

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