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Observational Analyses of Couple Interactions in Relationship Interventions

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FACULTÉ DES SCIENCES SOCIALES ET POLITIQUES

INSTITUT DE PSYCHOLOGIE

Observational Analyses of Couple Interactions in Relationship Interventions

THÈSE DE DOCTORAT

présentée à la

Faculté de Sciences Sociales et Politiques
de l'Université de Lausanne

pour l'obtention du grade de

Docteur ès Sciences en Psychologie

par

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2024



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Le Décanat de la Faculté des sciences sociales et politiques de l'Université de Lausanne, au nom du Conseil et sur proposition d'un jury formé des professeurs

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autorise, sans se prononcer sur les opinions de la candidate, l'impression de la thèse de Madame Esther LIEKMEIER, intitulée :

"Observational analyses of couple interactions in relationship interventions"

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Doyen

Lausanne, le 10 octobre 2024

Résumé

Les relations de couple sont essentielles à l'expérience humaine et influencent la santé et le bien-être. La majorité des recherches repose sur des questionnaires auto-rapportés, qui ne capturent pas le déroulement des interactions en temps réel. En complément, les méthodes d'observation offrent des données directes sur les interactions de couple, mais elles ont surtout été appliquées à des couples hétérosexuels en dehors des interventions relationnelles. Cette thèse se concentre donc sur l'observation des interactions de couple dans des interventions relationnelles ciblant des populations peu étudiées, comme les couples de parents et les couples de même genre. La première étude, une analyse de cas contrastés en thérapie de couple ($N = 2$), combine observation des interactions, questionnaires sur la qualité de la relation et analyse des séances de thérapie. La deuxième étude examine les changements dans les interactions observées ainsi que des questionnaires sur la qualité de la relation coparentale dans un échantillon plus large ($N = 64$). La troisième étude analyse les interactions de couples de même genre participant à un programme éducatif ($N = 8$), afin de déterminer dans quelle mesure ils ont intégré une méthode de communication enseignée durant le programme. Les résultats de la première étude ont révélé que les changements observés dans les interactions de couple ne correspondaient pas toujours aux résultats obtenus par questionnaires, mais étaient cohérents avec l'analyse des séances. La deuxième étude a montré que, bien qu'aucun changement significatif n'ait été observé lorsque les comportements étaient analysés globalement, certains comportements spécifiques, tels que la défensivité et la domination, ont connu des évolutions notables. La troisième étude a démontré que les couples de même genre intégraient et appliquaient largement la méthode de communication enseignée durant le programme. En conclusion, les méthodes d'observation offrent une analyse fine et en temps réel, permettant de révéler des informations ne peuvent pas être récoltées avec les questionnaires. Par conséquent, combiner les deux méthodes offre une vision plus complète de la complexité des interactions, enrichissant ainsi notre compréhension des dynamiques relationnelles. Les avancées de l'intelligence artificielle ouvrent des perspectives prometteuses pour renforcer notre capacité à étudier et comprendre les interactions de couple de manière plus efficace dans les années à venir.

Abstract

Couple relationships are essential to human experience and significantly impact health and well-being. While relationship science has expanded our understanding of relationship dynamics, much of the research relies on self-reports, which may not capture the full complexity of interactions as they occur. Observational methods, however, provide direct insights into real-time behaviors and communication patterns. Despite their potential, these methods have mainly been applied to populations not enrolled in relationship interventions, particularly married heterosexual couples. Therefore, this dissertation focuses on observing couple interactions within relationship interventions, specifically targeting understudied populations, such as parent couples and same-gender couples. The first study, a contrasted case analysis ($N = 2$), examined the interactions of two parent couples in therapy, using observational analysis, self-reports on relationship quality, and an analysis of the therapy sessions. The second study investigated changes in couple interactions in a larger sample of parent couples ($N = 64$) using observational methods and self-reports on coparenting quality. The third study focused on same-gender couples ($N = 8$) in a relationship education program, assessing their adherence to a taught communication method. Findings from Study 1 showed that observed changes in couple interactions did not always correspond to self-reports but were consistent with therapy session analyses. Study 2 indicated that while overall changes in observed interactions were not significant, specific behaviors, such as defensiveness and domineering, showed notable changes. Study 3 revealed that same-gender couples interactions closely aligned with the communication method they were taught. Overall, the findings underscore the value of observational methods for assessing couple interactions within relationship interventions. These methods provide moment-by-moment data, uncovering insights often missed or underreported in self-reports, thus enabling a fine-grained analysis of couple interactions. Therefore, combining observational methods with self-reports offers a more comprehensive view of the complexity of couple interactions, thereby improving our understanding of relationship dynamics. Looking ahead, advancements in artificial intelligence offer promising opportunities to enhance our ability to study and understand couple interactions more effectively as the field evolves.

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It takes a village.

I feel blessed.

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Chapter 1. Introduction

A couple relationship refers to the romantic and emotional connection between two individuals who have chosen to form a partnership based on mutual affection, companionship, and shared life goals (Bradbury & Karney, 2019; Finkel et al., 2017). This relationship is viewed as an essential source of meaning and purpose in life by many over the world and across cultures (Bonn & Tafarodi, 2013). The fascination with couple relationships in human existence has long been acknowledged by poets, novelists, and philosophers throughout history (Finkel et al., 2017). While Ellen Berscheid and Elaine Hatfield paved the way for relationship science in the early 1960s, the emergence of the discipline as a unified and interdisciplinary field dedicated to comprehending couple relationships only began in the late 1980s and 1990s (Berscheid, 1999; Finkel et al., 2017; Reis et al., 2013).

Over the past 40 years, many researchers have investigated relationship initiation, dissolution, and maintenance, as it helps us understand which factors contribute to a long-lasting couple relationship and what could lead to its ending (Ogolsky et al., 2017). This curiosity has prompted numerous studies in the field and a plethora of reviews have been published on the topic (for recent reviews, see Finkel et al., 2017; Proulx et al., 2017). The link between relationship quality and health outcomes has become increasingly evident in research. Relationships that are commonly thought of as unhealthy (e.g., those marked by highly negative interactions), social isolation, and loneliness have consistently been associated with poorer health, including decreased general well-being, elevated blood pressure, and a range of other health-related consequences (e.g., Don et al., 2023; Slatcher & Selcuk, 2017; Proctor et al., 2023).

While research on couple relationships has significantly deepened our understanding of human experience, it has predominantly relied on self-report questionnaires to assess relationship satisfaction (Fletcher et al., 2000; Perlman & Duck, 2006). As a result, many findings lack insight into how relationship experiences unfold in real time—an aspect that can be more accurately assessed through observational methods (Bradbury & Karney, 2019; Lindahl et al., 2019). Observing couple interactions, for example, provides reliable and precise information on how these interactions occur moment by moment (Charania & Ickes, 2006).

Studies have consistently demonstrated that negative interactions within couples are strongly associated with lower relationship satisfaction (e.g., Bloch et al., 2014; Friend et al., 2017; Kim et al., 2007) and have far-reaching effects on other dimensions, including family functioning (e.g., Lindahl et al., 2004) and child well-being (e.g., Zemp, Bodenmann, et al., 2016). Despite these findings, much of the existing research on couple interactions has been conducted primarily with couples who are not enrolled in relationship interventions. However, observing couple interactions within relationship interventions offers additional benefits: it helps identify problematic patterns during therapy sessions, facilitates monitoring of couples' progress by tracking changes in the interactional behavior, and allows for the evaluation of strategies aimed at improving both individual and relational well-being (Wampler & Harper, 2014).

Over the past 47 years, few studies in relationship intervention research have analyzed couple interactions using observational methods (Doss et al., 2022; Markman et al., 2022; Roddy et al., 2020). Among those that have, the focus has predominantly been on married heterosexual married couples, resulting in a lack of diversity. Although recent research on couple relationships has begun to include a wider variety

of couple types, our understanding of these diverse groups remains limited (VanLear et al., 2006; Williamson et al., 2022; Randall & Curran, 2023). By focusing on parent couples and same-gender couples, this dissertation investigates populations that have received less attention in observational studies within relationship intervention research.

With these considerations in mind, this dissertation focuses on the observation of couple interactions in relationship interventions targeting understudied populations in this context. The first section of this introduction provides an overview of the research methods and key constructs used in couple relationship research, establishing the framework for my studies. Following this, I discuss the observation of couple interactions, providing a brief history of the method and summarizing key findings from populations outside relationship interventions to emphasize its relevance in intervention research. The third section focuses on studies involving observed couple interactions within the context of relationship interventions, examining study designs (e.g., observational settings and features), sample characteristics, and analytical strategies while synthesizing the results that informed the design and implementation of my studies. Finally, I conclude by summarizing the insights from these sections and outlining the overarching aims of this dissertation.

Methods and Constructs in Couple Relationship Research

Those who study couple relationships traditionally use cross-sectional, longitudinal, or experience sampling methods to gain insights into individuals' perceptions and experiences, as well as experiments to investigate specific aspects of relationships in a controlled setting. Researchers can use a wide range of methods to collect data on various key constructs in quantitative or qualitative format to investigate the complexities of couple relationships. This section will provide an overview of the research methods employed and the key constructs assessed in couple relationship research.

Research Methods in Couple Relationship Research

In the following sections, I will describe the key ones for collecting data in quantitative format: self-reports, observational methods, and physiological measures. These methods can either be used separately or combined.

Self-Report Questionnaires

Self-report questionnaires constitute the most widely employed method by those who study couple relationships. Questionnaires are a convenient and efficient means of collecting extensive information regarding a partner's beliefs, attitudes, and self-perceived behaviors about their couple's relationship (Bradbury & Karney, 2019; Charania & Ickes, 2006; Snyder et al., 2019). For example, Richter and Schoebi (2021) used self-report questionnaires to investigate how daily perceptions of rejection may influence the perception of partner responsiveness in a sample of 75 heterosexual (i.e., mixed-sex) couples. The results demonstrated that men felt more rejected in daily life when their partner reported more rejection sensitivity; however, there was no significant effect for women. Additionally, the findings showed that when women and

men felt rejected by their partners, they would also perceive their partners as less responsive, and their partners would perceive them as less responsive.

This method offers notable advantages, such as ease of distribution, applicability to large samples, cost-efficiency, and the ability to access a partner's subjective perceptions they might be hesitant to disclose in face-to-face communication (Charania & Ickes, 2006). Additionally, when used correctly, self-report questionnaires can have high construct validity, meaning they closely match what the researchers are trying to measure (Bradbury & Karney, 2019). Nonetheless, there are some inherent drawbacks associated with this method. For example, self-reports are prone to social desirability bias (i.e., the tendency for people to answer questions in a way that will be viewed favorably by others) and memory loss (i.e., difficulty in accurately recalling an event) (Bradbury & Karney, 2019). Moreover, some constructs may prove challenging for individuals to grasp. For instance, when asked to describe others' opinions of them, people often lack awareness of how they are perceived by others and may guess based on their hopes and ideals rather than their actual social standing (Bradbury & Karney, 2019).

Observational Methods

Observational methods offer valuable insights into partners' behaviors as they naturally occur across diverse settings (Charania & Ickes, 2006; Lindahl et al., 2019). The diverse settings in which observations may occur include controlled laboratory environments, designed to elicit specific behaviors, or more naturalistic settings, such as the couples' home (Charania & Ickes, 2006). The observed behaviors can be captured through audio or video recordings, and they can be rated either by trained observers, the partners themselves, or by specialized software (Bradbury & Karney, 2019; Charania & Ickes, 2006; Lindahl et al., 2019). The time span over which the

behaviors are observed varies depending on the research question, ranging from brief periods for micro-behaviors (e.g., smiles or eye blinks) to longer periods for macro-behaviors (e.g., the couple's degree of negative escalation or negative affect) (Bradbury & Karney, 2019; Charania & Ickes, 2006; Lindahl et al., 2019). For instance, using micro-observational methods, Leuchtman et al. (2019) investigated negative and positive communication behavior and its association with relationship satisfaction in 365 couples. The authors demonstrated that couples who entered the conflict discussion with greater positivity from the women or who were able to downregulate the women's negativity during the conversation tended to report higher relationship satisfaction (Leuchtman et al., 2019). The findings also showed that women's trajectory of negative communication was predictive of changes in relationship satisfaction over four years (Leuchtman et al., 2019).

Observational methods have both advantages and disadvantages. One advantage of these methods is their ability to provide direct assessments of behaviors, offering insights that are further strengthened by the relatively objective records provided by external observers (Bradbury & Karney, 2019). On the downside, the presence of observers or cameras can influence participant behavior, potentially compromising the representativeness of observed behaviors (Snyder et al., 2019). Additionally, behavior codes or settings may not always be optimal for capturing or eliciting targeted behaviors effectively and generalizability across observation contexts may also be limited (Snyder et al., 2019). Furthermore, this method is time-consuming in several aspects: (1) researchers need extensive training to be able to reliably perform the coding, (2) the coding procedure can be relatively long, especially for the coding of micro-behaviors, and (3) to calculate interrater reliability, the coding needs to be performed by several observers (Bradbury & Karney, 2019).

Physiological Measures

Physiological measures contribute significantly to advancing our understanding of relationships by bridging the gap between biological and psychological perspectives (Charania & Ickes, 2006) as this method assesses the body's physical reactions to specific interpersonal situations (Bradbury & Karney, 2019). Examples of physiological indicators include heart rate, blood circulation, general somatic activation (e.g., skin conductance), and hormonal fluctuations (e.g., cortisol levels via saliva samples) (Bradbury & Karney, 2019).

Levenson and Gottman (1983) were pioneers in using this method by measuring the heart rate and skin conductance of married couples engaged in a disagreement discussion. In contemporary research, the advancement of functional magnetic resonance imaging (fMRI) technology allows researchers to explore how specific brain areas are activated in the context of relationships (Bradbury & Karney, 2019). For example, Coan et al. (2017) used fMRI technology to investigate the neural responses to threat in 110 participants. The authors wanted to discover the main effects of social regulation by handholding, thus they asked the participants to have an fMRI scan while being exposed to the threat of an electric shock. The study was composed of three parts: a) holding the hand of a familiar relational partner, b) holding the hand of an unseen opposite-sex accomplice, and c) not holding any hand. The results showed that connection with a close relational partner was likely to alleviate subjective distress. In contrast, no regulatory effects were observed while the participants were holding the hand of a stranger. One explanation is that the regulation to threat is likely amplified by an individual's expectation of support from their broader social network (Coan et al., 2017).

The advantages of physiological measurements in relationship research include their involuntary nature, operating beyond an individual's control and awareness (Bradbury & Karney, 2019). This quality renders them immune to social desirability or memory bias (Bradbury & Karney, 2019). However, this method also presents certain challenges. It is notably resource-intensive, demanding considerable time and specialized equipment, and requires expertise (Charania & Ickes, 2006). Additionally, interpreting the meaning of physiological responses can be intricate, introducing ambiguity into the analysis (Bradbury & Karney, 2019). For instance, an increased heart rate may not necessarily indicate arousal; it could also suggest that the person is experiencing discomfort or stress.

Key Constructs Examined in Couple Relationship Research

In the field of couple relationship research, the prevailing focus has traditionally centered on the assessment of relationship quality (i.e., a person's subjective evaluation of whether their relationship is rather good or bad; Fletcher et al., 2000; Perlman & Duck, 2006). Over time, researchers have acknowledged that relationships can be influenced by multiple factors simultaneously. As a result, numerous key constructs are now being assessed to investigate couple relationships (Bradbury & Karney, 2019). These constructs can be grouped into two categories: individual (e.g., depressive symptoms) and relational (e.g., level of commitment partners have toward their relationship). In a recent study examining predictors of relationship quality using data from 43 longitudinal couple studies, factors from both individual and relational categories emerged as the most reliable predictors of relationship quality (Joel et al., 2020).

The research methods allow different assessments of individual and relational constructs. Self-report questionnaires, for example, can be used to assess both

categories, whereas observational measures are particularly suited for studying relational constructs. Features of communication and/or interactions are relational variables frequently evaluated with observational measures in couple relationship research. Communication and interactions are sometimes used interchangeably in studies, however, while closely related, they are distinct concepts. Communication refers to the exchange of information, thoughts, feelings, and ideas between two people in a relationship (Rosengren, 2003). It involves both verbal and non-verbal forms of expression, such as speaking, listening, body language, and gestures (Rosengren, 2003). Interaction encompasses all the ways in which individuals in a couple engage with each other; it includes not only communication but also actions, behaviors, and responses (Rusbult & Van Lange, 2003). Interaction can be positive, negative, or neutral (Rusbult & Van Lange, 2003). In summary, while communication is a crucial aspect of interaction, couple interactions extend beyond the verbal and non-verbal exchange of thoughts and emotions to encompass a broader range of behaviors, actions, and responses that shape their relational dynamics (Rusbult & Van Lange, 2003).

Conclusion

In the history of couple relationship research, a predominant emphasis has been placed on assessing relationship satisfaction through self-report questionnaires. This approach has been widely favored due to its efficiency, cost-effectiveness, and ease of administration. However, while self-reports offer valuable insights into individuals' perceptions of their relationships, they are inherently limited by subjective bias and the respondents' self-awareness.

An alternative and complementary approach to studying relationships is observing human behavior directly. Observational methods enable a direct assessment

of interpersonal dynamics, such as couple interactions. By analyzing these interactions in real time, observational methods offer a nuanced understanding of relationship dynamics, capturing behaviors as they occur and providing a detailed, fine-grained analysis of how couples engage with one another.

While the systematic observation of human behavior has a long history in psychology, the use of observational measures to study couple interactions as a means of understanding relationships gained prominence in the 1970s and became a gold standard method at the time (Bulling et al., 2023). One of the pioneering researchers in this area was John Gottman, a psychologist renowned for his work on marital stability and divorce prediction (Gottman, 1979, 1994). Beginning in the 1970s, Gottman and his colleagues employed observational methods to study couple interactions (Gottman, 1979; Gottman & Krokoff, 1989; Gottman & Levenson, 1986). Gottman introduced the concept called the "Four Horsemen of the Apocalypse" to describe destructive communication patterns (i.e., interactional behaviors characterized by criticism, contempt, defensiveness, and stonewalling), which he demonstrated could reliably predict relationship dissolution (Gottman, 1994, 1999).

From then on, other researchers have also utilized observational methods to investigate couple interactions and their links with various relationship outcomes, which I will expand on in the next section.

Observing Couple Interactions

Since its beginnings, the observation of couple interactions has led to a plethora of research investigating the association between interactions and a multitude of variables (e.g., depression, or family functioning). Furthermore, studies have also been conducted across several life stages and cultures. Similar to self-report research indicating that relationship distress can affect physical health and other aspects of couple relationships, studies on observed couple interactions reveal that negative interactions not only contribute to relationship distress (e.g., Bloch et al., 2014; Kim et al., 2007) yet also have extensive effects on other areas, such as family functioning (e.g., Lindahl et al., 2004), or children's well-being (e.g., Zemp, Bodenmann, et al., 2016).

In this section, my goal is to emphasize the usefulness of observing couple interactions in the study of couple relationships. I will begin by detailing how this method has been primarily utilized, expanding on the brief introduction provided in the previous section. Next, I will summarize key research findings related to observed couple interactions. Finally, I will highlight the practical applications of this approach by discussing the significance of studying couple interactions within the context of relationship intervention research.

Approaches to Observing Couple Interactions

Observing couples' interactional behavior provides access to independently coded, real-time data on how long and how often specific behaviors are displayed, as well as the sequences of actions that occur before and after these behaviors (Bulling et al., 2023). For example, when two partners discuss a topic of disagreement, behavioral observation makes it possible to account for how long each partner criticizes the other, or which behavior was displayed directly before the critique. Typically, researchers

observe couple interactions within settings that involve conflict or disagreement discussions, problem-solving discussions, or discussions revolving around stressful topics (Lindahl et al., 2019). These situations mirror the challenging conversations commonly experienced over the course of a relationship. Given that such discussions can strain relationships and lead to negative outcomes on both individual (e.g., worse psychological health; Fincham & Beach, 1999) and interpersonal levels (e.g., lower relationship quality; Randall & Bodenmann, 2009), they hold significant relevance in the study of couple dynamics and couple relationships.

Coding systems have traditionally been classified as either macroanalytic or microanalytic; some midlevel coding systems have also been developed over time (Lindahl et al., 2019). Macroanalytic coding systems categorize behavior into broader coding units and are typically used to rate general behaviors during interactions (Lindahl et al., 2019). These systems do not usually break down the interaction into smaller units but instead consider the larger context in which a behavior occurs (Lindahl et al., 2019). For example, researchers might look at an interaction and rate the intensity of a behavior, such as the warmth exchanged between the two partners over the course of the interaction. On the other hand, microanalytic coding systems are more time-consuming and costly, the interaction is usually sequenced into smaller units, and the coding involves more discrete behaviors (Lindahl et al., 2019). For instance, the researchers might sequence the entire interaction into smaller units (e.g., 10 or 30-second sequences) and rate each of these sequences for a behavior, such as the presence of criticism.

Brief Overview of the Research on Observed Couple Interactions

How couples interact with one another may have implications for their relationship satisfaction, the functioning of the whole family, as well as individual

well-being. In this section, I offer a brief overview of research on observed couple interactions to highlight the effectiveness of observational methods in studying these interactions and to demonstrate their application to populations outside relationship interventions, along with the outcomes they produce. Since Friedlander et al. (2019) recently published a comprehensive review, I have provided a summary below.

Most studies have explored the link between couple interactions and the overall quality of couple relationships, examining this association in various contexts such as during the transition to marriage (e.g., Markman et al., 2010), across different cultures (e.g., Williamson et al., 2012), and among older couples (e.g., Henry et al., 2007). Overall, a consensus has emerged from various studies, including those by Friend et al. (2017), Gottman and Krokoff (1989), and Kim et al. (2007), suggesting that negative interactions (e.g., with a high prevalence of criticism and/or contempt) play a significant role in decreasing relationship satisfaction, while positive interactions (e.g., with a strong presence of mutual validation and/or compliments) contribute to increasing relationship satisfaction. For instance, Kim et al. (2007) explored the association between positive affect (e.g., humor) and negative affect (e.g., criticism) and relationship satisfaction in behaviorally coded videotaped relationship problem discussions in a sample of 85 married or cohabiting couples. The results indicated that both the overall frequency and the ratio of positive to negative affect displayed by both men and women were significantly associated with higher levels of relationship satisfaction. Thus, couples who had more positive interactions also reported greater long-term satisfaction (Kim et al., 2007). Using data from 210 couples across their first five years of marriage, Markman et al. (2010) explored the association between couple interactions and relationship satisfaction in the transition to marriage by coding behaviors in videotaped problem-discussion tasks. Their results demonstrated that

premarital negative communication (e.g., negative affect, withdrawal, or dominance) was linked to lower levels of reported marital adjustment (i.e., relationship satisfaction) during the initial five years of marriage.

Furthermore, how two partners adhere to cultural norms, values, and practices that pertain to fundamental aspects of couple relationships also shapes their interactions (Uhlich et al., 2022). For example, a study by Williamson et al. (2012) on newlywed American and Chinese couples indicated that, even when accounting for relationship satisfaction, Chinese couples displayed notably higher levels of negative behavior in behaviorally coded videotaped discussions compared to American couples. This result may stem from the perception that seeking support is deemed self-centered in collectivist cultures (i.e., Chinese culture) but acceptable in individualistic ones (i.e., American culture). Additionally, the positivity in couple interactions was significantly correlated with higher levels of relationship satisfaction in American couples, while negativity was related to lower levels of relationship satisfaction exclusively for Chinese husbands. This might be because individualistic cultures tend to prioritize positivity more than collectivistic cultures and because negative emotions such as anger are viewed as violating norms and disrupting group harmony in collectivistic cultures (Williamson et al., 2012).

Researchers have also investigated couple interactions in elderly couples, underscoring the importance of understanding relational dynamics across the lifespan. For example, Henry et al. (2007) conducted a study on 106 middle-aged couples (40-50 years old) and 98 older couples (60-70 years old) by coding their behaviors during videotaped disagreement discussions and collecting self-reports of relationship satisfaction. Their findings indicated that when partners displayed more positive behavior, they and their partner would also report more relationship satisfaction, and

this association was stronger in older couples. The authors explain the difference between the age groups by suggesting that older adults might tend to regulate their emotions within the marital relationship by choosing to avoid conflict discussions when possible (Henry et al., 2007).

The exploration of couple interactions extends to other areas of the couple relationship, such as the transition to parenthood (e.g., Tanner Stapleton & Bradbury, 2012), family functioning (e.g., Lindahl et al., 2004) or child well-being (e.g., Zemp, Bodenmann, et al., 2016). For example, Tanner Stapleton and Bradbury (2012) examined problem-solving and social support in behaviorally coded videotaped interactions in 84 newlywed couples before parenthood and their association with parent-child interactions observed 9 years later. Their results suggest that the couple interactions at the onset of their marriage predicted later parenting behavior for both mothers and fathers. Thus, when newlyweds showed positivity and lower negativity while supporting each other, they tended to promote security and support in parent-child interactions later on (Tanner Stapleton & Bradbury, 2012).

Lindahl et al. (2004) explored the association between couple interactions and family functioning in a sample of 237 two-parent families with a child between the ages of 8 and 12. The couples participated in a videotaped problem discussion task related to a problem area in their relationship and the triad's interaction (mother-father-child) was also assessed during a videotaped discussion of a recent family argument (i.e., involving both parents and the child). The interactions were coded by research assistants blind to all information about the families and to the study's hypotheses. The results indicated that balanced power sharing during the couple interactions was positively associated with family functioning. Thus, more egalitarian couples (i.e., both partners' opinions, ideas, and feelings received equal respect and consideration,

with each contributing equally to decision-making) in their disagreement discussion task also displayed a more effectively organized and cohesive family functioning (i.e., shared sense of mutual appreciation among family members as they collaborated toward a common objective). The findings also indicated that the reverse effect was true, suggesting that couple interactions characterized by conflictual power dynamics (e.g., one partner dominating the conversation, or directing the conversation) were linked to a decline in overall family functioning.

Couple interactions have also been extensively studied in relation to children's well-being. For example, Zemp, Bodenmann, et al. (2016) investigated how the positivity and negativity in behaviorally coded videotaped discussions between parents on an area of disagreement (e.g., childrearing or money) predicted children's perceptions of threat (e.g., getting scared when the parents argue) and insecure family representations (e.g., wondering whether the parents will separate or divorce when they have an argument) using a sample of 43 children aged 9-13, and their parents. The findings indicated that the negativity inherent in parental conflicts significantly shaped how children perceived threats and insecurity within their familial environment. Thus, when the mother and the father displayed more negative behaviors, such as criticism, domineering, or defensiveness in their conflicts, their children also reported more threats and higher levels of insecurity.

Finally, research on observed couple interactions extends beyond relationship-related variables. Some studies examined the broader impact of couple interactions on different aspects of peoples' lives, such as the repercussions on their health. For instance, Sandberg et al. (2013) explored the association between negative couple interactions (e.g., hostility) in behaviorally coded videotaped discussions, physical health, and mental health (i.e., depressive symptoms) in a sample of 281 couples. Their

findings indicated that when couples displayed more negative behavior (i.e., hostility, angry coercion, reciprocate hostility, and contempt), husbands and wives reported more depressive symptoms, whereas only husbands would report poorer health.

Conclusion

The observation of couple interactions is a valuable method for understanding and assessing relationships, offering insights into how couples function across various life stages and contexts. These interactions not only shape the trajectory of the relationship but also have broader effects on family dynamics (e.g., the emotional climate) and children's well-being (e.g., quality of relationships with peers). Research highlights that strained couple relationships can negatively impact many aspects of life, underscoring the need for interventions that improve relationship dynamics. Observational methods are therefore valuable in both contexts, whether couples are enrolled in relationship interventions or not, providing a comprehensive view of couple dynamics. In the context of relationship interventions, these methods allow the identification of problematic patterns, monitoring of progress, and assessment of the effectiveness of intervention strategies. By understanding the processes behind relationship outcomes, observational methods contribute to the development of evidence-based interventions that foster healthier relationships and, ultimately, healthy individuals. Consequently, this dissertation will explore observed couple interactions within the framework of relationship interventions to enhance our knowledge of how these dynamics can be improved.

Observed Couple Interactions in Relationship Interventions

Observing couple interactions allows for a fine-grained analysis, providing detailed insights into a couple's interactional dynamics, which are particularly relevant within the context of relationship interventions (Heyman, 2001). This method can serve as a tool for monitoring and evaluating progress during relationship interventions (Wampler & Harper, 2014). For instance, through systematic observation of couple interactions by outside raters, changes in real time can be observed and tracked in both negative interactional behaviors (e.g., communication patterns marked by criticism or defensiveness) and positive interactional behaviors (e.g., expressions of affection or effective problem-solving). Additionally, the observation of couple interactions can further prove useful for evaluating the effectiveness of interventions (Wampler & Harper, 2014). By comparing the frequency and quality of interactions between the initial and final therapy sessions, the impact of the intervention on the couple's interactions and overall relationship functioning can be assessed.

To investigate the extent to which relationship intervention research includes the observation of couple interactions, I reviewed two studies (Doss et al., 2022; Markman et al., 2022) and a meta-analysis (Roddy et al., 2020). These three recent publications encompass 124 studies on relationship interventions aimed at reducing relationship distress, conducted between 1977 and 2019, with 114 focusing on relationship quality as a primary outcome, and only 20 including observed couple interactions. Thus, studies on observed couple interactions in relationship interventions are scarce.

In this section, I will review these 20 studies by first summarizing their research designs, including settings, features, rating systems, and data analysis strategies, to learn from existing studies and gain insights into how research on couple interactions

in the context of relationship interventions can be optimally conducted. Next, I will examine the types of couples studied to provide an overview of the populations included in this research. Finally, I will summarize the main research findings, presenting an overview of the current knowledge on observed couple interactions within relationship interventions. Detailed information about these 20 studies is provided in Table 1.

Table 1*Overview of Studies Examining Observed Couple Interactions in Relationship Interventions*

Authors	Year	Population observed	Setting(s)	Features observed	Rating system	Analyses of the observational data	Results
Balfour & Lanman	2012	Heterosexual couples Some were parents of 1 or more children Mean age 38	Videotaped therapy sessions	30 items assessing the qualities of a person's internal object relations (single scale with two axes: depressive VS paranoid-schizoid)	PRP	Couple considered as one, observed in terms of a shared mode of relating (i.e., the partners are presumed to share one predominant mode of psychological functioning) Coding sequence size not specified	Improvements in couple functioning on the depressive and paranoid-schizoid scales was significant from pre- to posttest. Meaning the couple showed a greater capacity to be insightful, reflective, tolerate differences and separateness, they made less use of pathological defense mechanisms.
Bakhurst et al.	2017	Heterosexual married or cohabiting military couples Mean age 33 Parent status not indicated	Audiotaped disagreement discussion (10 mins)	Positive speaker behavior (self-disclosure, positive suggestion) Positive listener behavior (acceptance, agreement) Negative speaker behavior (criticism, negative suggestion) Negative listener behavior (disagreement, justification, withdrawal) Positive and negative affect in tone of voice Behaviors coded every 30-seconds interval.	Brief KPI	Derived score for each partner was the percentage of intervals during which the partner was "observed" using each category of behavior (i.e., positive speak, negative speak, positive listen, negative listen, positive affect, negative affect). Overall positive and negative scores were created by calculating the average of the categories.	No change in positive communication, decrease in negative communication in both the treatment and control groups

Authors	Year	Population observed	Setting(s)	Features observed	Rating system	Analyses of the observational data	Results
Bradley et al.	2014	Heterosexual committed couples, experiencing mutual violence, with at least 1 child Mean age not indicated	Videotaped conflict discussion task (15mins)	Patterns of affect and communication exhibited by each partner coded for each partner with a software in 1-second intervals.	SPAFF	Only contempt, anger, belligerence, domineering, and defensiveness were coded and grouped into "propensity toward violence.	For men: the treatment group showed less propensity toward violence than the control group and this propensity decreased over time. There were no significant results for women.
D. H. Baucom	1982	Heterosexual Married couples Some were parents Mean age 32	Two videotaped problem solving conversation task on two problems (5-6 mins each)	29 Verbal and nonverbal categories	MICS	Each partner's scores combined into positive and negative behavior and an average score was calculated for the couples Coding sequence size not specified	More positive behavior and less negative behavior in the treatment groups at posttest. More negative behavior in the control group at posttest
D. H. Baucom & Lester	1986	Heterosexual married couples Some were parents Mean age 34	Two audiotaped problem solving conversation task (7 mins each)	11 Verbal categories: accept responsibility, compromise, problem-solution, agree, approval, humor, complain, criticize, deny responsibility, excuse, put down	MICS	Each partner's scores collapsed into 3 summary codes for each partner: problem solving, positive verbal communication, negative verbal communication Analyses conducted separately for wives and husbands Coding sequence size not specified	More problem-solving, more positive verbal behavior and less negative verbal behavior at posttest for husbands and wives. Except for control group: less problem-solving and more negative verbal behavior at posttest.

Authors	Year	Population observed	Setting(s)	Features observed	Rating system	Analyses of the observational data	Results
D. H. Baucom, Sayers, & Sher	1990	Heterosexual married couples Some were parents Mean age 34	Two videotaped problem solving conversation task (7 mins each)	28 behavior codes grouped into 7 categories: blame, invalidation, proposal for change, validation, facilitation, problem description, and irrelevant	MICS III	Each partner's scores combined into positive (proposal for change, validation, facilitation, problem description) and negative (blame and invalidation) Behaviors coded per minute	Less negative behavior for men and women in 3 out of 4 treatment groups. No significant change in positive behavior.
			Videotaped conversations about something the partner wants to change in themselves and what they want the partner to change (4 mins each)	Eight categories assessing positive or negative emotion	SFAS	The categories are coded for each partner and averaged into one score per scale and partner	Women in 3 out of 4 conditions improved on SFAS, the men did only improve on SFAS in 1 out of 4 conditions
				Eight categories that reflect empathetic listening	AOS		The men improved on AOS in all conditions, results for women not specified

Authors	Year	Population observed	Setting(s)	Features observed	Rating system	Analyses of the observational data	Results
Christensen et al. / Eldridge / Berns / Christensen, Atkins, et al. / K. J. W. Baucom, Sevier et al. / K. J. W. Baucom, B. R. Baucom, & Christensen	2004, 2000, 2002, 2006, 2011, 2015	Heterosexual married couples mean age 42 some were parents	Videotaped problem solving conversation task (10mins)	Problem-solving, communication behavior, and emotional features of interactions	CIRS	Items from both scales analyzed with PCA and combined into 4 scales: negativity, positivity, withdrawal, and problem solving. Only negativity and positivity in husbands and wives are analyzed.	Observed negativity and withdrawal decreased from therapy termination through the 2-year follow-up as expected, but problem solving did not change, and observed positivity decreased
				5 dyadic interaction patterns: negative reciprocity, positive reciprocity, wife demand/husband withdraw, husband demand/wife withdraw, vulnerability/empathy	SSIRS		
Cordova, Jacobson, & Christensen	1996, 1998	Heterosexual married couples Mean age 45 Some were parents	Audio- or videotaped therapy sessions (2 early, 2 middle and 2 late)	Soft expression, Detachment, Hard expressions, Engaging in the problem	NORS	Analyses not specified	Significant decreases in husband demand/wife withdraw and increases in relationship quality across groups; group differences for negative reciprocity, wife demand/husband withdraw decreased more in one condition, positive reciprocity and vulnerability/empathy increased more in one condition. Positive reciprocity, and vulnerability/empathy and decreases in husband demand/wife withdraw, negative reciprocity, and wife demand/husband withdraw pre-post
					Created by the authors		Verbal behavior coded for each partner

Authors	Year	Population observed	Setting(s)	Features observed	Rating system	Analyses of the observational data	Results
Cowan et al.	2011	Heterosexual parent couples living together Mean age 37 years	Two videotaped conflict resolution tasks (10mins each)	Negative communication: disagreement, negativity to partner, level of defensiveness Positive communication: couple teamwork, emotional connection, positive affect	9 ratings developed by authors	Ratings' scores summed into 2 categories: negative and positive communication	Decline in negative and increase in positive communication in the couple focus group. No change in the parent focus group. Increase in negative and decline in positive communication in the control group
Feinberg et al.	2016	Heterosexual couples living together and expecting their 1st child Mean age 30	Two videotaped problem solving interactions of the couple at pretest (12 mins each) and two triadic interactions at posttest: (12 mins and 6 mins)	Five to seven point scales measuring coparenting, parenting, child behavior, couple interaction	Coding developed for the study	Scales aggregated into positive and negative parenting, positive and negative communication, parenting positivity and negativity	More positive and less negative behaviors in the treatment group.
Hahlweg, Revenstorf, & Schindler / Revenstorf, Schindler, & Hahlweg / Schindler, Hahlweg, & Revenstorf	1982, 1983, 1983	Heterosexual married couples Mean age 33 75% were parents	Two videotaped problem solving conversation tasks (10 mins each)	28 verbal and non-verbal codes rated per minute	MICS	21 codes collapsed into positive and negative categories Positive: approve, agree, accept, responsibility, compromise, humor, positive solution, attention, laugh, assent, positive physical Negative: complain, criticize, disagree, deny responsibility, excuse, interrupt, negative solution, put down, no response, not tracking, turn off Husbands' and wives' scores were averaged into one couple score	Significant overall decrease in negative behavior after therapy for couples in the treatment groups No significant difference in the positive behavior category after therapy.

Authors	Year	Population observed	Setting(s)	Features observed	Rating system	Analyses of the observational data	Results
Halford et al.	2010	Heterosexual committed couples expecting their 1st child Mean age 30	Videotaped conflict discussion (10mins)	Behaviors coded every 30-seconds interval. 3 classes of negative behavior: conflict, invalidation, and negative affect (nonverbal and verbal)	Brief KPI	Derived scores represented the percentage of intervals in which each behavior was observed for both the male and female partners.	Decrease in negative communication in the CARE group. Increase in negative communication in the Becoming a parent group.
Markman et al.	2013	Heterosexual premarital couples Mean age 26	Videotaped problem discussions (10-15mins)	Negative communication comprising 5 codes: negative affect, denial, withdrawal, conflict, and dominance, all coded at the individual level. Negative escalation was coded at the couple level	IDCS	5 codes averaged into negative communication for each partner. The partner's scores were then averaged for each couple.	The effect of the program on divorce was moderated by the couple's average negative communication. Meaning that couples were more likely to divorce when negative communication increased.
Mehlman, D. H. Baucom, & Anderson	1983	Heterosexual married couples Mean age 35 Some were parents	Two videotaped problem solving conversation tasks (5 mins each)	29 categories	MICS	Categories combined into positive and negative behaviors. Husband and wives scores were combined to provide one score per couple	No group difference in positive behaviors, and less negative behaviors in the treatment group. Significant increase in positive behaviors and decrease in negative behaviors at posttest for the treatment group.

Authors	Year	Population observed	Setting(s)	Features observed	Rating system	Analyses of the observational data	Results
Petch et al.	2012	Heterosexual married couples expecting their 1 st child Mean age 29	Videotaped conflict discussion (10mins)	Behaviors coded every 30-seconds interval. Presence of conflict, invalidation and negative (nonverbal) affect	Brief KPI	Derived scores represented the percentage of intervals in which each behavior was observed for both the male and female partners.	No change over time in conflict, increase in invalidation, and negative affect (for men only). Group differences: women in the treatment group had less conflict, more decrease in invalidation
Ripley et al.	2014	Heterosexual Christian couples (94% mainly married (9% not married)) Mean age 43	Videotaped discussion on a difficult topic (8-10mins)	Affect (+ and -), problem solving skills, denial, dominance, Support validation, conflict, withdrawal, communication skills Dyadic dimensions: Escalation (+ and -), commitment, future satisfaction, and stability	IDCS	Video divided into 3 equal segments. Partners coded individually and as a dyad on the 5 dyadic dimensions	Significant improvements on all scales, less negative and more positive from pre- to posttest
Snyder & Wills	1989	Heterosexual married couples Mean age 38 Some were parents	Two videotaped problem solving conversation tasks (7 mins each)	8 codes to reflect verbal content of speaker: agreement, disagreement, communication talk, mindreading, proposing solution, summarizing other, summarizing self, expressing problem feelings. 3 codes to reflect nonverbal behavior of speaker and listener: positive, negative, neutral	CISS	Discussions were transcribed and divided into thought units for coding. Codes collapsed into two measures: verbal agreement and nonverbal behavior	Group differences in verbal agreement and nonverbal behavior Couples in all groups showed increases in verbal agreement at posttest. Couples in 2 out of 3 treatment groups showed increases in nonverbal positiveness at posttest

Authors	Year	Population observed	Setting(s)	Features observed	Rating system	Analyses of the observational data	Results
Steinweg	1990	Heterosexual married couples Mean age 29 Some were parents	Audio-recorded conversations on any topic relevant to the relationship (easy & difficult topic – 3-5 mins each)	Quality of the interactions	CRAS	One overall score of the impact of the discussion on the relationships was rated: 1 = harmful impact; 5 = helpful impact	Group differences at post-test. Improvements in both treatment groups from pre- to posttest
Whitton et al.	2016	Same-sex male cohabiting and committed couples Average age: 40	Videotaped couple problem discussions (10-15 mins)	Nine-point scale for Nine key dimensions of constructive and destructive interactions; positive and negative interactions	IDCS	Nine key dimensions collapsed into positive and negative communication	Less destructive and more positive communication after the intervention Effect sizes were bigger for observational than self-reports group difference: less negative communication and more positive communication than waitlist controls
Wilson, Bornstein, & Wilson	1988	Heterosexual married couples Mean age 33 Not specified if parents	Audio-recorded discussions for which the topics were randomly selected based on assessment data (length not specified)	Positive verbal behaviors: talk, accept responsibility, interrupt, disagree, positive solution Negative behaviors: complain, criticize, deny responsibility, put down, turn off	MICS	Categories coded in 30-sec intervals. Ratings collapsed into negative and positive behaviors. Not specified if averaged per couple, yet induced by the analyses.	More positive and less negative behavior at posttest

Note. The coding system abbreviations: Personal Relatedness Profile (PRP); Kategoriensystem für Partnerschaftliche Interaktion [Couple Interaction Coding System] (KPI); Specific Affect Coding System (SPAFF); Revised Marital Interaction Coding System (MICS); Self-Feeling Awareness Scale (SFAS); Acceptance of Other Scale (AOS); Couple Interaction Rating System (CIRS); Social Support Interaction Rating System (SSIRS); Naïve Observational Rating System (NORS); Interactional Dimensions Coding System (IDCS); Couples Interaction Scoring System (CISS), Couple Rapid Assessment Scale (CRAS), Interactional Dimensions Coding System (IDCS).

Research Designs in Studies on Couple Interactions within Relationship Interventions

Among the 20 studies investigating observed couple interactions, a variety of research designs are employed, including different observational settings, assessed features, and data analysis strategies. In the following sections, I will provide a detailed overview of these elements to better understand how these studies are conducted.

Settings and Duration for the Observation of Couple Interactions

Of the 20 studies, two examined couple interactions by recording therapy sessions (Balfour & Lanman, 2012; Cordova et al., 1998). One study recorded discussions on topics randomly selected based on assessment data (Wilson et al., 1988), while another focused on discussions where the couple identified one topic as easy to discuss and another as difficult (Steinweg, 1990). The remainder ($n = 16$ studies) assessed couple interactions in either problem-solving discussions, conflict discussions, or disagreement discussions. These discussions can be considered to fall under the category of so-called challenging conversations. Challenging conversations are thought to reflect the types of interactions that couples may encounter in their everyday lives (Heyman, 2001). Therefore, challenging conversations are generally investigated in research on observed couple interactions because they provide valuable insights into a couple's functioning. Furthermore, in the study of couple interactions, challenging conversations are assumed to be more ecologically valid than conversations on a regular topic, as they tend to evoke more intense emotions and behavioral responses, reflecting real-life situations where couples may face disagreements or challenges. Consequently, in the context of relationship intervention research, studying couple interactions during challenging conversations can allow researchers to identify patterns of communication that may be problematic in the

couples' daily lives, as well as gather insights into how couples navigate and resolve conflicts, which in turn can promote the development of interventions or prevention programs to address these specific issues (Weiss & Heyman, 1997).

Regarding the duration of the observed interactions in the studies including challenging conversations, two studies observed short interactions (i.e., 3-5 minutes; Mehlman et al., 1983; Steinweg, 1990), 11 studies examined the interactions in conversations lasting between 6-10 minutes, and four studies recorded longer interactions (i.e., 10-15 minutes; Bradley et al., 2014; Feinberg et al., 2016; Markman et al., 2013; Whitton et al., 2016). Therefore a great variability can be observed, which could suggest that there is no consensus or standard regarding the length of the interactions. Rather, it appears that the length of the conversation was chosen by the authors based on what had been done in past research or on the rating system selected by the authors.

Features Observed in Couple Interactions and Rating Systems Applied

According to Snyder et al. (2019), the observation of couple interactions generally targets six major classes of behaviors: 1) affect (e.g., affection, humor, contempt, criticism, sadness, anger, anxiety), 2) behavioral engagement (e.g., demand, withdrawal, pressures for change, avoidance), 3) general communication skills (e.g., verbal and nonverbal negativity and positivity, involvement, information and problem description, clarity of commands/requests), 4) problem-solving (e.g., self-disclosure, interruption, validation, facilitation), 5) power (e.g., verbal aggression, attempts to control, coercion), and 6) support/intimacy (e.g., emotional and tangible support). Across the 20 studies, most of the features can be categorized into these six categories. There are several potential explanations for the homogeneity: for example, multiple studies were conducted by the same author (e.g., D. H. Baucom) and most used the

same pre-existing rating systems (e.g., Revised Marital Interaction Coding System (MICS); G. R. Patterson et al., 1975). One significant advantage of using an established rating system, especially one that has been employed by multiple labs, is that it facilitates consensus on how to assess a particular construct of interest in couple interactions (Lindahl et al., 2019). This, in turn, supports the advancement of research on observed couple interactions within relationship interventions.

Analytical Strategies to the Observational Data

There has been an evolution in the analysis of observational data in research on relationship interventions. The data are no longer averaged across couples, and other methods to analyze the interactional data have emerged (e.g., the use of principal component analysis) to complement the traditional positive-negative ratio. These changes highlight not only the evolution of knowledge in the analysis of dyadic data in general but also in the statistical methods used for observational analyses.

Studies in the early 1980s often averaged the partners' interactional behaviors to create a single score for the couple (i.e., the partners' scores were combined into one overall score). For example, in D. H. Baucom's (1982) study, the partners' scores were averaged to produce a single score for each couple. The limitation of this type of analysis is that the aggregation leads to data loss and does not allow for the differentiation of behaviors between the two partners. Data drawn from couples is inherently dyadic, as both partners' data are dependent and correlated (Atkins & B. R. Baucom, 2016). Thus, the behavior of one partner will inevitably influence the other's. Looking at the 20 studies, a shift in the analyses began to emerge at the end of the 1980s to address the limitation of combining the partners' scores. Researchers stopped averaging partners' scores to create a single couple score and began considering each partner's scores individually. This approach provides a more accurate representation

of how each partner interacts with the other and has been used in some studies to highlight differences between partners during interactions.

Furthermore, studies conducted in the 1980s on observed couple interactions tended to aggregate the observed behaviors into two broad categories: positive and negative behavior. Even though the authors used rating systems with several categories of both positive and negative behavior, they opted to group behaviors related to positive and negative interactions together. For example, Hahlweg et al. (1982) used the rating system MICS comprised of 28 verbal and non-verbal codes (e.g., verbal: compromise, humor, criticize, or complain; non-verbal: negative voice tone or smile), which the authors then collapsed into a positive and a negative category. Aggregating behaviors into more general categories represents a limitation in the analysis, as it removes the subtleties of interactions. Thus, it is no longer possible to draw conclusions on a specific behavior, such as a decrease in criticism or an increase in compromise, rather one can only make assumptions about positive or negative behaviors in general terms.

While it is challenging to fully overcome this limitation due to the vast amount of data generated by observational coding, authors of recent studies have relied on other means to analyze the coded behaviors. For example, K. J. W. Baucom et al. (2015) used principal component analysis to reduce the dimensionality in their ratings instead of averaging the coded behaviors into the two traditionally used positive and negative categories. Using this method, the authors found that their ratings could be grouped into four major categories, which were negativity, positivity, withdrawal, and problem-solving. This approach shows that some behaviors can be grouped into other categories than positive or negative behaviors and therefore makes it possible to add more depth to the interpretation of the research results.

Finally, the main takeaway from this evolution is that, when analyzing observed couple interactions, it is advisable not to aggregate the coded behaviors for the couple or average them into general categories of positive and negative behavior. Instead, researchers should consider whether these behaviors can be categorized more specifically or, if possible, analyze them separately.

Couple Types in Couple Interaction Studies within Relationship Interventions

Only one study specifically targeted same-sex¹ couples (Whitton et al., 2016), while the remaining 19 studies focused exclusively on heterosexual couples. Furthermore, in 11 of the 20 studies, being married was a criterion for inclusion. However, more recent studies have included committed or cohabiting couples regardless of marital status. Some studies also noted that participants had children, though often without specifying how many couples this applied to.

The inclusion of diverse types of couples in research focusing on couple relationships no matter in which context has evolved, reflects changing societal attitudes (Eickmeyer et al., 2020; VanLear et al., 2006; Williamson et al., 2022). Historically, studies centered on heterosexual, married couples, frequently adhering to traditional gender roles and family structures (Williamson et al., 2022). However, from the latter half of the 20th century onwards, there was a growing recognition of LGBTQ+² couples and non-heteronormative relationships. This shift prompted research that challenged the limited scope of earlier studies (Morris, 2023; Williamson et al., 2022). Legal changes, such as the legalization of same-gender marriage (ILGA Europe, 2023), along with increased societal acceptance of diverse relationships, have

¹ The term used by the authors is not explicitly defined in their study, but it can be inferred from their research that it refers to a couple composed of two individuals who were assigned the same sex at birth (e.g., two men or two women).

² Lesbian, Gay, Bisexual, Transgender, and Queer (or Questioning), with the "+" sign representing other sexual orientations, gender identities, and expressions that are not specifically covered by the main letters.

further supported a more inclusive approach in couple relationship research. Although these inclusion efforts have been ongoing for several years, a recent review indicates that only 10% of the studies conducted from 2014 to 2018 focused on traditionally underrepresented samples (i.e., non-White, low-income, and/or sexual and gender minorities) (Williamson et al., 2022). Therefore, couple relationship research needs to continue to strive for more diversity in terms of couple relationship types (Randall & Curran, 2023).

The late 20th and early 21st centuries also saw greater acknowledgment of diverse couple structures, including cohabiting couples and parent couples (Coontz, 2004; Williamson et al., 2022). While some of these groups were represented in earlier studies (e.g., parent couples), there was often no differentiation or specific focus on the unique dynamics these diverse structures entail. Research has shown not only that a significant number of couples entering therapy are parents (Klann et al., 2011) but also underscored the importance of the coparenting relationship in families, as it is a critical component of overall family functioning (McHale & Lindahl, 2011; Feinberg et al., 2012).

Given these considerations, there is a clear opportunity to expand research across diverse demographic groups. This dissertation, therefore, focuses on exploring the interactions of parent couples and same-gender couples, acknowledging the importance of broadening the range of couple types studied. By concentrating on these understudied populations in relationship intervention research, the goal is to enhance our understanding of their interactional dynamics within this context.

Synthesis of Study Results on Couple Interactions in Relationship Interventions

Most studies focused on assessing changes in observed interactions before and after the intervention. Some investigations extended their analysis to include follow-

up measures conducted after the conclusion of the intervention (e.g., K. J. W. Baucom et al., 2015), while others specifically observed interactions during therapy sessions (e.g., Balfour & Lanman, 2012). Overall, the results show a notable decrease in negative behaviors and a corresponding increase in positive behaviors (e.g., D. H. Baucom, 1982; Cowan et al., 2011; Ripley et al., 2014; Wilson et al., 1988). However, it is noteworthy that not all studies reported a significant increase in positive behaviors after the intervention. For instance, studies by D. H. Baucom et al. (1990) and Hahlweg et al. (1982) did not demonstrate a significant increase in positive behaviors, while another study even found a marginal decrease in positive behaviors after the intervention (K. J. W. Baucom et al., 2015).

Furthermore, some studies have explored potential gender differences in the behaviors within couple interactions. Bradley et al. (2014) found no significant change in women's observed behaviors indicating a propensity toward violence, while men showed a significant decline after the intervention. Petch et al. (2012) demonstrated that, from pre- to post-intervention, women experienced less conflict and a greater decrease in invalidation, while men showed an increase in negative affect.

The variability in results among the 20 studies also highlights the nuanced nature of intervention outcomes, indicating that the effectiveness of these interventions in fostering positive behaviors may be influenced by various factors. These could include, yet are not limited to, the specific approaches employed. For example, some intervention modalities (e.g., specific training in problem-solving skills) may be better suited to helping couples improve their interactions. Another interesting factor is that different interventions may be more suited to certain types of issues. For instance, the cognitive-behavioral therapy approach emphasizes identifying and challenging negative thought patterns and replacing them with more constructive ones, while the

systemic approach places an emphasis on the interconnectedness of individuals within a system and views the relational issues as being related to patterns of interaction and communication within the couple. A third factor that can be mentioned is that the individual differences among participants, such as demographic characteristics, cultural backgrounds, or previous experiences, may also impact how individuals respond to interventions.

Conclusion

Studies on observed interactions in relationship interventions are scarce. One possible explanation is related to the history of behavioral observation of couple interactions. Since 1980, there has been a decline in the use of behavioral observation in favor of self-reports, mainly due to their lower cost, reduced time commitment, and easier implementation (Bulling et al., 2023; Liekmeier, et al., 2021). Most studies described in this section were conducted in the 1980s and early 1990s, with fewer studies following until an uptick around 2010. This recent increase may be due to renewed interest in the method, driven by the availability of advanced statistical techniques that allow for more sophisticated analyses beyond simple averages of interactional behavior. Additionally, the emergence of new technologies has made the observation of couple interactions more efficient, potentially overcoming some of the method's earlier limitations. The integration of Artificial Intelligence (AI) for the observation of couple interactions holds promise, yet it is only very recent and currently still under exploration. Therefore, in this dissertation, I will rate the couple interactions by using established rating systems to obtain better validity in my results and I will be relying on recent data analytic procedures to identify distinct behavioral patterns beyond the ratio of positive to negative behavior.

Additionally, the primary focus of the studies described in this section has traditionally been on married heterosexual couples. However, while relationship researchers have advocated for more inclusion and intersectionality, we are still far from knowing as much about other populations as we know about heterosexual married couples. Thus, this dissertation focuses on parent couples and same-gender couples, as these populations are among those that have received less attention. Focusing on these populations is particularly relevant, as examining how partners interact on parenting-related topics can help us understand how these interactions shape the dynamics of their relationship (e.g., challenges and adaptations they undergo when raising children together). While including same-gender couples promotes an understanding of their relationship experiences, as these couples may encounter unique challenges, such as minority stress due to the largely heteronormative contexts they live in.

Finally, studies on couple interactions in relationship interventions indicate that couple interactions tend to improve following relationship interventions. This highlights the efficacy of relationship interventions in fostering more positive and harmonious interactions (e.g., with more acceptance, agreement, and emotional connection), as well as the usefulness of the observation of couple interactions in identifying changes when couples undergo relationship interventions. However, improvements in couple interactions are not consistently demonstrated across studies on relationship interventions. While some studies fail to show a significant increase in positive behaviors (e.g., approval, agreement, humor), resulting in similar levels of positive interactions before and after the intervention, others report a decrease in these behaviors following therapy (e.g., less positivity after therapy). Additionally, some studies have found an increase in negative interactions, such as more invalidation and

conflict, after the intervention. Therefore, further research utilizing observational methods to evaluate the effectiveness of relationship interventions is needed.

Conclusion

Several conclusions can be drawn from the information presented in this introduction. First, research on couple relationships has primarily utilized self-reports to assess relationship quality and functioning. These self-reports are cost-effective and easy to administer, offering valuable insights into individuals' perceptions of their relationships. However, to gain a more comprehensive understanding of how couples interact in real time, observational methods serve as a complementary approach. By directly capturing behaviors and communication patterns as they occur, observational methods provide a detailed and nuanced analysis of couple interactions. Consequently, this dissertation examines couple interactions using observational methods.

Second, most research on observed couple interactions has focused on populations not participating in relationship interventions. Applying observational methods to couples involved in relationship interventions could greatly improve our ability to identify interactional patterns and deepen our understanding of relationship dynamics within this context. The information gathered through this approach provides a unique perspective for monitoring and assessing couples' progress during interventions. Since these observations are closely aligned with intervention realities, they could contribute to the ongoing refinement and improvement of intervention strategies. Accordingly, this dissertation will focus on couple interactions within the context of relationship interventions.

Third, studies on observed couple interactions in relationship interventions, currently grapple with a notable lack of inclusivity in the exploration of diverse populations. This suggests that many studies in relationship intervention research may not adequately represent the full spectrum of relationship experiences, not only leading to an incomplete or biased understanding of couple relationship dynamics but also

affecting both the validity and applicability of research findings. By focusing on samples that have not been independently studied in relationship intervention research (i.e., parent couples) and diversifying the participant pool to include underrepresented populations (i.e., same-gender couples), I aim to advance a more comprehensive understanding of the inherent variability in couple interactions within less studied populations in relationship interventions while addressing issues of generalizability in this context.

Present Research

In the study of couple relationships, self-report questionnaires have traditionally been the primary method for assessing relationship satisfaction due to their efficiency and ease of use. While self-reports provide valuable insights into individuals' perceptions, observational methods offer a complementary approach by directly assessing interpersonal dynamics. By analyzing couple interactions in real time, these methods capture behaviors and communication patterns as they unfold, providing a more detailed and nuanced understanding of how couples interact.

While most research on observed couple interactions has focused on couples not enrolled in relationship interventions, this dissertation will instead focus on couples undergoing such interventions. By examining these interactions, we can better understand how couples navigate challenges in an intervention setting and evaluate the effectiveness of interventions and participants' adherence to the methods taught.

Building on insights from previous studies on couple interactions in relationship interventions, particularly regarding research designs (i.e., setting, features assessed, and analyses), this dissertation will investigate couple interactions during challenging conversations. I will use established rating systems to analyze these interactions, applying validated analytical techniques such as principal component analysis, as well as more recent and advanced approaches like the dyadic dynamic systems perspective, to gain a deeper understanding.

Additionally, my research will focus on parent couples and same-gender couples to enhance our understanding of couple interactions within these groups, particularly in the context of relationship interventions. This focus also aims to fill gaps in the literature concerning underexplored populations in the field of relationship

interventions, promoting a more comprehensive view of relationship dynamics across diverse groups.

For this dissertation, I conducted three studies, that are reported in their respective chapters (i.e., Chapters 2-4) and outlined below. My studies include two types of relationship interventions: couple therapy and a couple relationship education program. In addition, due to the nature and size of the samples, I conducted two case studies (Chapters 2 and 4), and a study on a larger sample drawn from an RCT (Chapter 3). Chapters 2 and 3 are published scientific articles and chapter 4 is currently being revised for resubmission. An overview of the studies can also be found in Table 2.

The first study (Chapter 2) is a contrasted case analysis that investigated couple interactions of parent couples in couple therapy. One case showed an improvement in the observed interactional behavior after therapy, whereas the other did not. I evaluated couple interactions by observing their emotional behavior in a disagreement discussion and included self-reports of their relationship quality (i.e., coparenting, and romantic satisfaction) at pre- and post-therapy. In addition, I also provided an analysis of the therapy sessions for both cases with the contribution of the therapists to illustrate the couples' progress within therapy sessions and gain further insight into the differences in the evolutions of the couples' interactional behavior. This study had the following three aims:

- (1) How do the parent-couple interactions, as measured by observed affective behavior, in two contrasted cases change after therapy?
- (2) Are those changes reflected in the partners' relationship quality, as measured by self-reports of romantic and coparenting satisfaction?
- (3) What insights can the clinical analysis of therapy sessions contribute to the change observed in the couple interactions?

As a second step, I used a larger sample of parent couples in couple therapy to examine the changes in couple interactions and their coparenting relationship quality following couple therapy. Thus, the second study (Chapter 3) is based on a sample of 64 mixed-sex parent couples undergoing couple therapy. I rated the couples' emotional behavior in their interactions at pre- and post-therapy in disagreement discussions and conducted a principal component analysis to reduce the dimensionality in the data and identify which behavior categories were mainly displayed by the partners. Additionally, I also included self-reports of their coparenting relationship quality. This study covered the following two aims:

- (1) Does the parent couples' coparenting quality, as measured by self-reports of positive and negative coparenting, improve after therapy?
- (2) Will the parent-couple interactions, as measured by observed affective behavior, be more positive and less negative after therapy?

The third study (Chapter 4) served a different purpose. In this study, the coding of couple interactions sought to evaluate the degree to which partners adhered to an instructed method, an important component in assessing the efficacy of relationship interventions. In this study, I investigated the interactions of eight same-gender couples attending a couple relationship education program specifically designed for same-gender couples. During the program, the couples were taught a method (i.e., the 3-phase method) on how to communicate and provide support to one another in a stressful situation. Through transcribing and coding the couple interactions recorded during the 3-phase method, I examined the partners' turn-taking behaviors and thus their fidelity to the method. This study addressed the following two aims:

- (1) How do the couples interact, as measured by observed turn types, during a conversational exercise on a relationship stress?

- (2) Do the couples' interactional patterns, as measured by observed turn types, align with the instructions given for the conversational exercise?

In summary, all together these three studies will contribute to a more thorough understanding of observed couple interactions in relationship interventions and provide insights into the effectiveness of the intervention (Studies 1 and 2), and participants' fidelity to a method taught during the intervention (Study 3).

Table 2*Overview of the Empirical Chapters in this Dissertation*

Chapter	Reference	Type of Study	Aims
2	Liekmeier, E., Darwiche, J., Pinna, L., Repond, A.-S., & Antonietti, J.-P. (2021). Affective behavior in parent couples undergoing couple therapy: Contrasting case studies. <i>Frontiers in Psychology, 12</i> , Article 634276. https://doi.org/10.3389/fpsyg.2021.634276	Longitudinal with two contrasting cases	<ul style="list-style-type: none"> • Investigate couple interactions before and after therapy • Include self-reports and an analysis of therapy sessions to document the change in interactions
3	Liekmeier, E., Vowels, L. M., Antonietti, J.-P., Bodenmann, G., & Darwiche, J. (2023). Coparenting change after couple therapy using self-reports and observational data. <i>Journal of Marital and Family Therapy, 49</i> (3), 675–691. https://doi.org/10.1111/jmft.12647	Longitudinal with 64 couples	<ul style="list-style-type: none"> • Examine couple interactions pre- and post-therapy • Investigate change in self-reports of negative and positive coparenting
4	Liekmeier, E., Randall, A. K., Calveri, E. G., Totenhagen, C. J., Darwiche, J., and Bodenmann, G. (2023) Behavioral Coding of Communication Dynamics in Same-Gender Couples' Support Conversations [Manuscript under revision]. Institute of Psychology, University of Lausanne.	Multiple case study with 8 couples	<ul style="list-style-type: none"> • Explore the unfolding of couple interactions during conversation task to assess their fidelity to a taught communication method

Chapter 2. Affective Behavior in Parent Couples Undergoing Couple Therapy: Contrasting Case Studies

This chapter is based on Liekmeier, E., Darwiche, J., Pinna, L., Repond, A.-S., & Antonietti, J.-P. (2021). Affective behavior in parent couples undergoing couple therapy: Contrasting case studies. *Frontiers in Psychology, 12*, Article 634276. <https://doi.org/10.3389/fpsyg.2021.634276>

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Abstract

Being in a romantic relationship is characterized by a high degree of intimacy and affective involvement. Affective behavior indicates the emotional content in couple interactions and therefore promotes an understanding of the evolution of romantic relationships. When couples are also parents, their affective behavior reflects their romantic and coparental bonds. In this paper, we present an observation of parent couples' affective behavior during a coparenting conflict discussion task to document whether and how much it improved during couple therapy. Two contrasting cases of affective behavior change are included.

Observational coding of affective behavior within pre- and post-intervention coparenting conflict discussion tasks was carried out to compute means and confidence intervals for each partner in both cases. In addition, the partners' coparental and romantic satisfaction were evaluated through validated self-report questionnaires in pre- and post-intervention assessments; this helped document whether the partners' coparental and romantic satisfaction were dissimilar between the two cases. Finally, a clinical analysis of both cases was realized with the contribution of the therapists to investigate possible differences within therapy sessions.

Statistical analyses revealed negative means of affective behavior for couple A in the pre-intervention assessment and positive means in the post-intervention assessment. Partners from couple B had negative means of affective behavior in the pre- and post-intervention assessments. Results concerning coparental and romantic satisfaction differed: Couple A's coparental satisfaction slightly increased and the romantic satisfaction somewhat decreased, whereas couple B's coparental satisfaction remained stable and the romantic satisfaction slightly increased between the pre- and post-intervention assessments. The clinical analysis revealed that the interactional

quality of couple A slightly improved within therapy sessions and that both partners succeeded in working together as coparents, notwithstanding their romantic distress. Couple B conveyed coparental distress and exhibited poor interactional quality throughout therapy sessions (e.g., repeated criticism and contempt).

This study contributes to enriching the more traditional empirical research methods in the field of couple psychotherapy, as it takes into account microlevel affective changes within parent couples' interactions in addition to self-reported data. Furthermore, the analysis of therapy sessions supports the importance of working with affective behavior in couple therapy.

Introduction

Adult romantic partners experience intense emotions related to their relationships and have to cope with their emotional lives, both individually and as couples (Mirgain & Cordova, 2007; Sanford & Grace, 2011). When showing emotion, one communicates to their partner how they perceive a situation or might react (Sanford & Grace, 2011). Coan and Gottman (2007) defined the apparent and observable features of emotional content in couple interactions as affective behavior. Affective behavior can manifest itself in positive and negative nonverbal and/or verbal behaviors, such as affection, validation, interest, withdrawal, belligerence, and criticism (Coan & Gottman, 2007). Empirical literature shows that affective behavior is an important sign of what is going on in couple interactions (e.g., Gottman & Krokoff, 1989; Ben-Naim et al., 2013; Bloch et al., 2014). Previous research has demonstrated that couple interactions (specifically affective behavior) are linked with romantic satisfaction (e.g., Kim et al., 2007; Bloch et al., 2014). In the context of parent couples, interactions between partners can reflect emotions experienced both in their romantic and coparental relationships. Romantic partners who are also parents share a romantic bond, but as they are responsible for the upbringing of one or more children, they are also bound by a coparental relationship (Feinberg, 2003). Existing data highlight that coparental interactions are linked with the coparental relationship. Prior research results have shown that positive coparental interactions (i.e., coparents being empathic and loving) are linked with a positive coparental relationship (i.e., coparental cooperation; Kolak & Volling, 2007).

Coparental interactions (i.e., interactions between two coparents regarding coparenting issues) have mainly been investigated within community samples, even though a significant number of couples seeking couple therapy are also parents (Klann

et al., 2011). Therefore, studying improvements in coparental interactions and in the coparental relationship of parent couples undergoing couple therapy appears to be relevant. This study is an effort to investigate affective behavior in parent couple interactions in couple therapy and its relationship with the coparental and romantic relationships in a clinic setting.

In terms of associations between couple interactions in general (with both partners considered romantic partners or coparents), several outcomes can be found in couple research literature. The most widespread studies focus on the link between couple interactions and romantic satisfaction, showing that positive couple interactions are related to higher relationship satisfaction (e.g., Gottman & Krokoff, 1989; Rogge et al., 2006; Friend et al., 2017). Other studies have explored the link between couple interactions and outcomes, such as (1) depressive symptoms, in which negative interactions were related to higher reports of depressive symptoms (e.g., Brown & Harris, 2012); (2) family functioning, in which conflictual power dynamics in couple interactions were associated with lower family functioning (e.g., Lindahl et al., 2004); and (3) children's reports of perceived threats and insecurity toward interparental conflict, in which negativity in parental conflict was linked with children's perceptions of threats and insecure family representations (e.g., Zemp, Bodenmann, et al., 2016). Among this body of research, couple interactions have been investigated at various life stages, such as in the transition to marriage (e.g., Markman et al., 2010), transition to parenthood (e.g., Tanner Stapleton & Bradbury, 2012), or in elderly couples (e.g., Story et al., 2007). Furthermore, the majority of studies have been conducted within community samples, whereas others have addressed couple interactions within clinic samples.

Data specific to relationships between couple interactions using observational measurements and treatment responses within a clinic sample are indeed scarce. Previous research results concern the study of affective quality in general, without specifying the type of population (romantic or parent couples) or the addressed topic of discussion (romantic and/or coparental). One study of a sample of 55 married couples receiving behavioral or insight-oriented couple therapy showed that a lower proportion of nonverbal positive listening behaviors in a post-intervention conflict discussion task were associated with more distress 4 years after completing therapy (Snyder et al., 1993).

Another study (K. J. W. Baucom et al., 2015) examined the link between couple interactions and treatment response as measured by relationship outcomes in a sample of 134 distressed couples randomly assigned to receive either integrative behavioral couple therapy or traditional behavioral couple therapy. Couples' treatment responses were assessed based on their interactions during problem discussions (as rated by naïve coders) and the participants' self-reports of romantic satisfaction. Results indicated (1) improvements in communication from pre- to post-therapy for couples in both therapeutic groups and (2) a positive link between improvement in couple communication and treatment outcomes. Thus, greater improvements in communication from pre- to post-therapy and better communication at post-therapy were related to better relationship outcomes. Given that a significant number of distressed couples initiating couple therapy are parents and that previous research conducted on clinic samples investigated affective quality in general without indicating whether the couples were in a romantic or coparenting relationship, further research is needed to explore coparental interactions of parent couples undergoing couple therapy.

Previous research has stressed the importance of considering the coparental relationship when studying romantic couples who also coparent. The act of coparenting involves coordination among adults responsible for the care and education of children (Feinberg, 2003). Coparental interactions have been studied in relation to several variables (e.g., child outcomes, family functioning, romantic satisfaction, and coparental satisfaction). One way to investigate coparental interactions of parent couples undergoing couple therapy is to explore the link between their affective behavior during a coparenting discussion and coparental satisfaction. Only a few studies have specifically evaluated this link in community samples. Findings relating to coparental affective interactions – either self-reported or observed – have shown an association between the quality of these interactions and of the coparental relationship. Kolak and Volling (2007, p. 468) investigated self-reported emotional expressiveness, which the authors define as reflecting “a stable pattern of how individuals communicate emotions within the family context”, and the quality of the self-reported coparental relationship in a sample of 57 community couples. Their results showed (1) positive links between fathers’ and mothers’ reported positive expressiveness (i.e., openness and being empathic, loving, and concerned) and perceived coparental cooperation as well as (2) positive associations between fathers’ and mothers’ reported negative expressiveness and perceived coparental conflict (Kolak & Volling, 2007). Hence, when partners reported experiencing more positive emotions and less negative emotions, they also appeared to perceive more cooperation and less conflict in their coparental relationship (Kolak & Volling, 2007).

The second study consisted of an observation of parents’ affective interactions and the links between those interactions and observed coparenting behavior during family play. In a sample of 47 married community couples, McHale (1995)

demonstrated an association between observed coparenting conflicts in couples' interactions (i.e., partners blaming one another) in couple interviews, during which the parents were asked to discuss their home lives and the stresses experienced since the birth of their child/ren, and observed hostile-competitive coparenting within a family play situation. Results showed that partners blaming each other when interacting as a dyad were more likely to show hostile-competitive patterns of coparenting within the family, even after controlling for general romantic distress in the sample (McHale, 1995).

Present Study

To date, studies on couples' affective interactions have primarily been focused on interactions between romantic couples. However, in the context of parent couple interactions, both partners can be involved as romantic partners or coparents in discussing topics related to the upbringing of their child/ren. Furthermore, the partner's affective behavior may be different in romantic or coparental interactions; for example, parent couples may be in conflict at the romantic level but share positive affective interactions at the coparental level or vice versa. To our knowledge, no data exist specifically concerning the quality of coparenting interactions in couple therapy settings. Therefore, further investigation within the field of clinical and couple psychology is needed to explore whether the results observed in community samples apply to particularly distressed couples, such as couples seeking help through couple therapy.

To address these gaps in existing research, an ongoing randomized controlled trial (RCT) investigates the efficacy of an integrative brief systemic intervention for parent couples, specifically exploring coparental dynamics and their progress for parent couples undergoing couple therapy (de Roten et al., 2018). For the purpose of

this study, two contrasting cases were drawn from the ongoing RCT sample of 65 parent couples based on the observation of the partners' affective behavior within pre- and within post-intervention discussion tasks.

The aims of this study were to: (1) explore observed affective behavior within pre- and post-intervention discussion tasks in which the parent couples discussed a disagreement regarding their coparental relationship to assess whether these couples could be differentiated on their affective behavior change, (2) analyze whether the different coparental affective behavior change patterns were also apparent in the pre- and post-intervention self-reported coparental and romantic satisfaction questionnaires, and (3) integrate the clinical analysis of the therapeutic processes of both cases to investigate whether the couple's affective behavior change was also reflected in therapy sessions. Based on previous findings, we assumed that negative affective behavior would be associated with lower coparental and romantic satisfaction post-intervention. Moreover, we expected to identify explanatory markers of the couples' change of positive and negative interactions within therapy sessions.

Method

Participants

Both heterosexual couples were drawn from a sample of 65 parent couples participating in an ongoing RCT. Change patterns were calculated for a subsample of 25 couples based on available coded data for pre- and post-intervention affective behavior coding. Three change patterns were observed within the subsample: (1) nine couples experienced a positive change in their affective behavior; (2) eight couples did not undergo a change (i.e., their affective behavior remained positive or negative in both assessments); and (3) eight couples experienced a negative change. Couple A belonged to the group experiencing a positive change and couple B to the group with

no change (their affective behavior remained negative in both assessments). Both couples were chosen from the subsample to: (1) compare affective behavior change in couples whose affective behavior was negative in the pre-intervention assessment, and (2) investigate whether a positive change vs. no change could also be observed in the couples' questionnaires and therapy sessions. Data liable to identify the couples, such as name, age, profession, gender, and children's ages, have been modified.

Partners from couple A, Marc and Emily, have been together for 8 years and have a 4-year-old son. They sought couple therapy because of issues related to their romantic intimacy. Couple B was composed of Arthur and Julia, who have been together for 35 years and have a 15-year-old daughter. Reasons for consulting were issues in their communication and disagreements regarding the upbringing of their child. Both couples were Swiss, living in Switzerland and belonging to the middle class. Each couple underwent a total of six systemic therapy sessions.

Therapists and Treatment

Both therapists were experts in systemic therapy and clinical sexology. The couple therapy took place in a couple counseling service.

The therapists delivered brief systemic therapy to both couples. Brief systemic treatment refers to standard brief systemic couple therapy lasting from 6 to 12 months maximum. In our sample, each couple underwent a total of six therapy sessions, each approximately one month apart. This time interval provides enough time to initiate a process of change within the couple's dynamic in between sessions and ensures that the therapist does not interfere negatively with the spontaneous change process (Selvini Palazzoli, 1980). This type of therapy mainly focuses on the romantic relationship and the difficulties couples face. However, therapists are likely to address other types of relationships, such as the parent-child or coparental relationship, as well

as family functioning and families of origin. The therapists were free to use concepts and techniques from different schools of systemic psychotherapy, such as the structural, strategic, or transgenerational models (Haley, 1963; Minuchin, 1974; Selvini Palazzoli, 1988).

Procedure

The study was conducted with the approval of the ethics committee of the University of Lausanne. Inclusion criteria for all participants from the ongoing RCT were that (1) partners were living together, (2) had at least one child not more than 16 years old, and (3) were involved in a coparenting relationship regarding the child or children. Couples were excluded from the study if they did not fulfill all three inclusion criteria or if they were in a crisis situation in which participation in the research could harm the therapeutic process. Participants were recruited through the clinics providing the treatment, and all gave written and informed consent to either audiotape or videotape the therapy sessions as well as to being filmed during couple discussion tasks before and after therapy. Before the first therapy session, a member of the research team contacted the couples to carry out the pre-intervention assessments. Participants filled out self-report questionnaires and took part in discussion tasks before the first therapy session and after the last. The pre- and post-intervention questionnaires were administered by the research team and completed privately by the participants. Therapy sessions took place in the clinic, while the discussion tasks took place either at the couples' homes or in the clinic.

In the observational discussion task (Gottman & Levenson, 1992; Baker et al., 2010), participants were asked to discuss a disagreement regarding their coparental relationship. Both parents received a list of topics related to coparenting (e.g., education, bedtime, outings, or mealtime). Each parent had to identify three

disagreement topics, either from the list or they could write down their own. The research member conducting the task then collected the topic sheets and checked if the partners had a topic in common. If so, they suggested that the parents discussed the topic they had in common. If not, the research member selected a topic identified by one of the parents and asked the other parent if they would feel comfortable in discussing this topic. The couples received the following instruction: “Discuss [chosen subject], a topic on which you disagree as parents or that has caused arguments or tension. Start by discussing the subject and what could have caused the argument, and then try to think about ways to solve the disagreement. The objective is not that you end up finding one solution, but that you try to work together toward a resolution. You now have 5 min.” The procedure was repeated for the post-intervention discussion task. The couples were provided financial compensation for their participation at the end of the post-intervention measurements.

Measures

Affective Behavior

Nonverbal and verbal affective behaviors within the pre- and post-intervention coparental discussion tasks were coded using an adapted version of the microanalytical Specific Affect Coding System (SPAFF; Gottman & Krokoff, 1989; Bodenmann, 2011). The SPAFF has been widely used and is an attested and externally validated approach to the coding of observational data, particularly for affective behavior in couples (M. D. Johnson, 2002; Zemp, Nussbeck, et al., 2017). This adapted system allowed the coding of discrete behaviors and is comprised of observational scales divided in five main categories: nonverbal positivity, nonverbal negativity, verbal positivity, verbal negativity, and neutral/nothing (Zemp, Bodenmann, et al., 2016). The verbal positivity category is composed of five subcategories: interest,

validation, affect/caring, emotional disclosure, and constructive criticism. Verbal negativity consists of seven subcategories: criticism, defensiveness, domineering, stonewalling, speech interruption, contempt, and belligerence. The values for the various types of affective behavior in the positive subscale are hierarchical (interest = 1; constructive criticism = 5), with constructive criticism representing the person being the most emotionally involved in the conflict and thus a more negative affective behavior than interest/curiosity. The values for the various types of affective behavior in the negative subscale are also hierarchical (criticism = 6; belligerence = 12), with belligerence being the most intense negative affective behavior. The values of the nonverbal affective behavior categories are as well hierarchical (nonverbal positivity = 1; nonverbal negativity = 2). The value given for the category neutral/nothing was 88 and missing data were coded 99.

The categories were coded separately for women and men, as previous literature has accounted for gender differences in communication patterns. The observational coding procedure involved three steps: (1) watching the video without coding, (2) coding the nonverbal behavior, and (3) coding the verbal behavior. These steps were repeated for the coding of the second partner. This coding method demonstrated good validity in previous studies (Kuster et al., 2015; Zemp, Bodenmann, et al., 2016, Zemp, Nussbeck, et al., 2017), and rater teams achieved a high interrater reliability (i.e., Cohen's kappa ≥ 0.90) in previous research (Zemp, Nussbeck, et al., 2017; Leuchtman et al., 2019). A master coder from the University of Zurich trained the first author. After 12 h of training, 4 h of supervision, and 60 h of coding training tapes, the first author demonstrated high interrater reliability (i.e., Cohen's kappa ≥ 0.90).

Coparental Satisfaction

The three dimensions of coparental satisfaction (support, conflict, and triangulation) were assessed with two questionnaires to get a comprehensive representation of this variable. The first questionnaire, the Parenting Alliance Measure (PAM), measured support, whereas the second, the Coparenting Inventory for Parents and Adolescents (CIPA), evaluated triangulation and conflict.

Parenting Alliance Measure

Coparental support was assessed by evaluating the strength of the perceived alliance between parents with the PAM (Konold & Abidin, 2001). The 20-item self-report questionnaire measured parenting aspects such as to what extent the parents are cooperative, communicative, and mutually respectful with regard to caring for their children. Scores on the PAM range from 20 to 100, with higher scores indicating a stronger and more positive parenting alliance. Internal consistency was excellent for mothers and fathers (mothers: $\alpha = 0.95$; fathers: $\alpha = 0.95$). We determined the Reliable Change Index (RCI) values for men and women using the data provided by Delvecchio et al. (2015): 15.11 for women and 15.29 for men.

Coparenting Inventory for Parents and Adolescents

The parents' perceptions of conflict and triangulation were measured with the 16-item CIPA (Teubert & Pinquart, 2011). Scores range from 0 to 4, with higher scores indicating more conflict and triangulation. Internal consistency was good for mothers and fathers (mothers: $\alpha = 0.84$; fathers: $\alpha = 0.87$). Following recommendations of Jacobson and Truax (1991), we calculated the RCI values for men and women using the data provided by Teubert and Pinquart (2011): 2.06 for women and 1.78 for men.

Romantic Satisfaction

The quality of the romantic relationship was evaluated with the 32-item Dyadic Adjustment Scale (DAS; Spanier, 1976). The global adjustment scores range from 0 to 151, with higher scores indicating a better adjustment. Scores underneath the cut-off score of 97 (Jacobson & Truax, 1991) and indicate that the partner is experiencing distress in the romantic relationship. Internal consistency was excellent for women and good for men (women: $\alpha = 0.91$; men: $\alpha = 0.89$). Following recommendations of Jacobson and Truax (1991), we calculated the RCI values for men and women using the data provided by Baillargeon et al. (1986): 12.2 for women and 13.51 for men.

Statistical Analyses

The observational data were entered in R (R Core Team, 2020), and the categories of the nonverbal behavior were re-coded as follows: positive nonverbal behavior = 1, negative nonverbal behavior = -1, and neutral/missing behavior = 0. Verbal behavior was re-coded as follows: Negative verbal affective behaviors were characterized by negative numbers (criticism = -1, defensiveness = -2, domineering = -3, stonewalling = -4, speech interruption = -5, contempt = -6, and belligerence = -7), thus representing gradually more negative affective behaviors. Positive numbers were used to identify the positive verbal affective behaviors (constructive criticism = 1, emotional disclosure = 2, affect/caring = 3, validation = 4, and interest/curiosity = 5), with higher numbers illustrating that the person displayed a more positive affective behavior. Each partner's nonverbal and verbal behavior raw scores were separately plotted within the pre- and post-intervention assessments. For each time interval, the vertical unit matched the affective behavior code displayed by the participant, and the horizontal distance unit matched the time sequence. Therefore, if the affective

behavior was positive, the point was above zero, and if the affective behavior was negative, the point was below zero. Greater numbers indicate more intense affective behavior. Means and CIs were computed for each partner, and the mean affective behavior of each partner was represented by a horizontal line in the plots. Then, paired student t-tests were calculated to contrast the partners' means between the pre- and post-intervention assessments. The null hypothesis stipulated both means to be equal, while the alternative hypothesis postulated a difference between the means.

Clinical Analysis

The clinical analysis was conducted in two steps, after the coding of the affective behavior. First, the first two authors (both psychotherapy researchers) summarized and analyzed all audiotaped therapy sessions (i.e., six sessions for each couple). Within each therapy session, particular attention was paid to specific markers, such as the couple's affective interactional dynamics (e.g., voice tone, specific verbal cues, and speaking turns) and the therapist's interventions (e.g., work on the romantic and/or coparental relationship, downregulation of the couple's negative interaction cycles, and work on the couple's affective behavior dynamics). Then, in the second step, these analyses were shared with the two therapists who validated the analyses or suggested revisions (e.g., they refined the content or gave additional information on the couple's affective interactional dynamic).

Results

Results are presented in three parts: affective behavior change, coparental and romantic satisfaction changes, and clinical analysis.

Affective Behavior Change

The plotted raw scores for couple A, as depicted in Figure 1, indicate that the partners' nonverbal and verbal affective behavior was substantially negative within the

pre-intervention discussion task and mainly positive within the post-intervention discussion task. Regarding couple B's plotted raw scores, both partners' nonverbal and verbal affective behavior were above all negative within the pre- and post-intervention discussion tasks, as illustrated by Figure 2. For both figures, the time interval is represented on the X-axis and the raw scores of affective behavior on the Y-axis.

Figure 1

Couple A: Raw Scores of the Observed Nonverbal and Verbal Affective Behavior within the Pre- and Post-Intervention Discussion Tasks

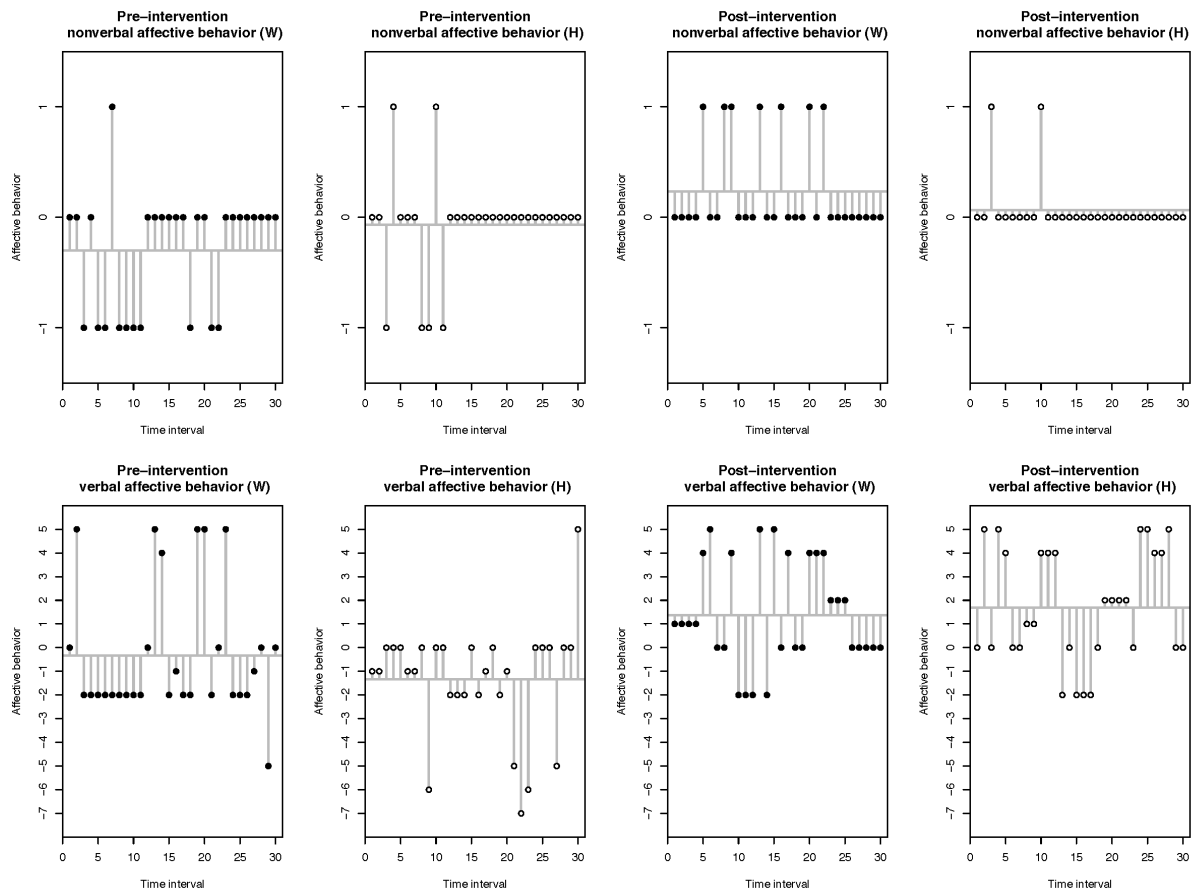


Figure 2

Couple B: Raw Scores of the Observed Nonverbal and Verbal Affective Behavior within the Pre- and Post-Intervention Discussion Tasks

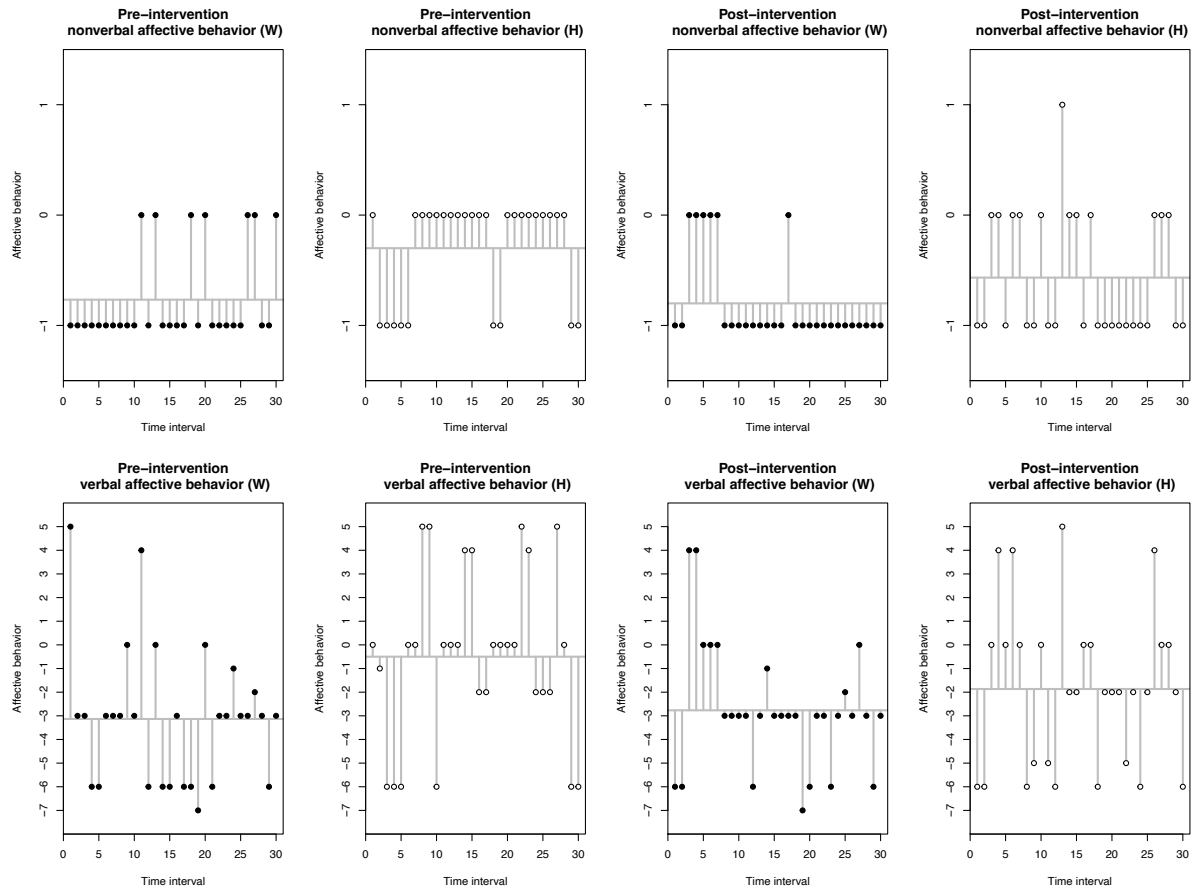


Table 1 displays results of the partners' affective behavior means and their respective CIs. The means summarize each partner's nonverbal and verbal affective behavior in terms of the 5-min discussion task. Analyses showed negative means in the nonverbal and verbal affective behavior for partners from couple A within the pre-intervention discussion task and positive means for the nonverbal and verbal affective behavior of both partners within the post-intervention discussion task. Results for couple B indicated negative means for both partners in the nonverbal and verbal affective behavior within the pre- and post-intervention discussion tasks.

Table 1

Means and CIs for Nonverbal and Verbal Affective Behavior within the Pre- and Post-Intervention Discussion Tasks for Couples A and B

Affective behavior	Couple A		Couple B	
	<i>M</i>	95% CI	<i>M</i>	95% CI
Pre-intervention				
Woman				
Nonverbal	-0.30	[-0.50, -0.10]	-0.77	[-0.93, -0.61]
Verbal	-0.33	[-1.38, 0.72]	-3.13	[-4.21, -2.06]
Man				
Nonverbal	-0.07	[-0.23, 0.10]	-0.30	[-0.47, -0.13]
Verbal	-1.33	[-2.23, -0.43]	-0.50	[-1.85, 0.85]
Post-intervention				
Woman				
Nonverbal	0.23	[0.07, 0.39]	-0.80	[-0.95, -0.65]
Verbal	1.37	[0.53, 2.21]	-2.77	[-3.77, -1.77]
Man				
Nonverbal	0.07	[-0.03, 0.16]	-0.57	[-0.78, -0.35]
Verbal	1.70	[0.80, 2.60]	-1.87	[-3.12, -0.61]

To compare each partner's affective behavior change between the pre- and post-intervention discussion tasks, we computed paired student t-tests. For couple A, results revealed that the woman displayed substantially more positive nonverbal and verbal affective behavior in the post-intervention discussion task [nonverbal: $t(29) = -3.76$, $p < 0.001$, 95% CI (-0.82, -0.24); verbal: $t(29) = -2.66$, $p = 0.013$, 95% CI (-3.01, -0.39)]. Even though the man's non-verbal affective behavior mean was positive in the post-intervention assessment, analyses indicated that his mean did not differ from the pre-intervention assessment [$t(29) = -1.44$, $p = 0.161$, 95% CI (-0.32, 0.06)]. However, the man showed significantly more positive verbal affective behavior in the post-intervention assessment [$t(29) = -5.01$, $p < 0.001$, 95% CI (-4.27, -1.79)]. For couple B, results from the paired student t-tests suggested that the woman's

nonverbal and verbal behavior means did not differ in the post-intervention discussion task [nonverbal: $t(29) = 0.27, p = 0.79, 95\% \text{ CI } (-0.22, 0.28)$; verbal: $t(29) = -0.48, p = 0.636, 95\% \text{ CI } (-1.93, 1.20)$], thus suggesting that her nonverbal and verbal affective behavior remained negative in the post-intervention assessment. The man showed significantly more negative nonverbal affective behavior in the post-intervention discussion task [$t(29) = 2.11, p = 0.043, 95\% \text{ CI } (0.01, 0.52)$], whereas there was no difference in his mean verbal affective behavior [$t(29) = 1.35, p = 0.188, 95\% \text{ CI } (-0.71, 3.44)$], therefore indicating that his verbal affective behavior stayed negative.

Coparental and Romantic Relationship Satisfaction Changes

Table 2 displays coparental and romantic satisfaction scores for couples A and B in the pre- and post-intervention assessments. In the post-intervention assessment, couple A reported a more positive coparenting alliance and less conflict and triangulation, as well as less romantic satisfaction. In couple B, the woman reported a similar and the man a lower score of coparenting alliance and both reported less conflict and triangulation. In addition, both partners reported higher scores of romantic satisfaction. Although partners from couples A and B reported changes in their coparental and romantic satisfaction, none of these can be considered as clinically significant.

Table 2

Pre- and Post-Intervention Scores of Coparental and Romantic Satisfaction for Couples A and B

	Couple A					
	Woman			Man		
	Pre	Post	Δ	Pre	Post	Δ
Alliance	72.0	78.0	6.0	85.0	96.0	11.0
Conflict and Triangulation	0.6	0.2	-0.4	0.8	0.3	-0.5
Romantic Satisfaction	83.0	77.0	-6.0	95.0	90.0	-5.0

Table 2 (continued)

	Couple B					
	Woman			Man		
	Pre	Post	Δ	Pre	Post	Δ
Alliance	76.0	76.0	0.0	85.0	82.0	-3.0
Conflict and Triangulation	1.6	1.3	-0.3	1.7	1.1	-0.6
Romantic Satisfaction	96.0	99.0	3.0	109.0	112.0	3.0

Clinical Analysis

Specific change markers within therapy sessions, such as the couples' interactional dynamics, were identified to shed light on the couples' affective behavior analysis. The results revealed that Marc and Emily (couple A) were able to foster a supportive coparenting relationship despite still experiencing romantic distress at the end of therapy. Their interactional dynamic underwent a slight positive change throughout the therapy sessions. For Arthur and Julia (couple B), the clinical analysis revealed the continuous presence of several coparental conflicts throughout the therapy sessions, which mainly remained irreconcilable. The interactional dynamic stayed negative, with the presence of frequent criticism and contempt throughout the therapy sessions.

Couple A

Marc and Emily's therapy indicated that they shared a supportive coparental bond, even though their romantic distress remained. Faced with a couple who came to therapy highly romantically distressed, the therapist sought to support and strengthen their coparental resources to preserve the coparental relationship. More broadly, the therapist also worked on the couple's interactional dynamic: e.g., Marc frequently criticized Emily, and Emily was mainly closed off and sometimes defensive. This

interactional dynamic changed throughout therapy sessions, and at the end of the therapy, Marc was more validating, and Emily became more assertive.

During the first session, the therapist was confronted with two different demands and a highly negative and destructive interactional dynamic. When the therapist explored both demands, it appeared that Marc wished for more physical intimacy and sex, whereas Emily desired less tension and more dialog in general. The nature of the couple's conflict around their romantic life was related to sexual desire discrepancies. During the couple's interactions within the first session, both partners generally expressed themselves in monologues (i.e., both spoke to the therapist and not to one another); additionally, Marc often overtly criticized Emily in front of the therapist, while Emily often broke down in tears and did not speak.

In the following therapy sessions, the therapist worked on the partners' demands and explored their needs. Unfortunately, it appeared that the deleterious interactional dynamic between the partners challenged the progression of the couple's romantic relationship. For instance, in Session 3, Marc overtly criticized Emily's general knowledge in front of the therapist. As a response to Marc's aggressive behavior, Emily started crying and tried to defend herself, but she often could not finish her sentences. The therapist also explored the coparental relationship through the couple's transition to parenthood and everyday life. It seemed that the atmosphere lightened when Marc and Emily tackled coparental topics within therapy sessions; both partners agreed more and sounded less tense. Given this context, the therapist put her focus on the positive aspects of the couple's relationship – for instance, their coparental relationship – and worked on soliciting and reinforcing this resource.

In the last therapy session, the therapist and the couple investigated the couple's progress during the therapy. It seemed that, notwithstanding the couple's romantic

distress and the impossibility of reconciling both partners' demands, Marc and Emily's interactions changed positively throughout therapy. Both partners recollected communicating substantially more throughout therapy sessions. Furthermore, Emily confirmed that the sessions helped her open up and become more assertive. As for Marc, he seemed to be able to listen more and to validate his partner's feelings to a greater extent. The therapist supported and validated this improvement. Finally, both partners felt they had made a step toward improvement and did not feel the need to continue therapy. Therefore, the therapy stopped after six sessions.

Couple B

Julia and Arthur's therapy analysis indicated they had several disagreements about their romantic and coparental relationships that could not be solved through therapy. It appeared that Julia and Arthur had different expectations of their romantic relationship and dissimilar educational values regarding their daughter's upbringing. Confronted with the repeated presence of criticism and contempt within the couple's interactions, the therapist attempted to reduce the negative interactional dynamic throughout therapy sessions. Moreover, the therapist sought to explore and reconcile both partners' needs. Nonetheless, this conflict and negativity appeared to have been in place for a long time in the couple's interactional dynamic and did not change in spite of the therapy sessions.

In the first session, the therapist's exploration of both partners' goals for therapy showed that they came because of their recurrent problematic communication and frequent disagreements in their everyday life. Further exploration indicated that Julia was the main source of the therapeutic demand: she wished for the couple's problematic interactions to change. During this session, the therapist was confronted with Julia and Arthur's conflicts and lack of empathy toward each other; therefore, she

intervened to comment on the negative dynamic between the couple and worked on reducing their conflicts in both their romantic and coparental relationships.

In subsequent sessions, the couple's interactional dynamic remained generally negative. Julia and Arthur appeared to communicate high coparental distress and exhibit poor interactional quality when interacting in therapy sessions. Both partners frequently criticized and interrupted each other and showed a substantial lack of empathy toward each other by exchanging dismissive remarks. The therapist worked on the couple's goals (i.e., changing the negative interactional dynamic) by intervening and reframing the couple's interactions. For instance, the therapist used the "positive connotation technique" (i.e., responding from another angle to a patient's statement by re-labeling in a positive way a situation that was initially labeled negatively). This means intervening in the following way: the therapist interrupted an argument and meta-communicated about what was happening by saying that the ongoing conflict was a sign that their relationship was still important to both of them. This allows partners to view their conflict in a different way and is seen in the systemic approach as a lever for change (Haley, 1963; Jackson, 1968; Selvini Palazzoli et al., 1978). The therapist also explored the couple's coparental functioning during the transition to parenthood and in their everyday life. It turned out that Julia and Arthur seemed not only to have different needs but also dissimilar or even opposed educational values. To reconcile both partners' needs and values, the therapist explored each partner's motivations to hang on to their individual values. In positively reframing the contributions of both partners by saying that they actually pull on the same string but not at the same time, the therapist worked on promoting a sense of unity between the coparents to strengthen the coparental relationship.

In the last session, Julia and Arthur argued anew about topics related to their coparental relationship, as was generally the case throughout therapy. This detrimental interactional dynamic led the therapist to interrupt both partners on several occasions to reduce the tension between them. At the end of the session, the therapist encouraged the couple to work together toward a solution by identifying what they could do to communicate their needs better and adapt to their partner's needs. As no significant change had occurred within the couple's interactional dynamic – and due to the couple's willingness to continue working on their demands – the therapist and the couple agreed to schedule additional therapy sessions outside of the research frame.

Discussion

Results from the contrasted cases indicate that the affective behavior change patterns that could be observed in the coparental discussion tasks (positive change vs. no change) were not systematically related to similar coparental and romantic questionnaire results. Couple A displayed a positive affective behavior change in the coparental discussion task which was reflected in the coparental satisfaction questionnaire but not in the romantic satisfaction questionnaire. Couple B's affective behavior change remained negative after therapy in the coparental discussion task, whereas both partners reported moderately high coparental satisfaction both in the pre- and post-intervention questionnaires and their romantic satisfaction increased between the pre- and post-intervention assessments.

The association between couple A's positive change of affective behavior and the increase in the coparental satisfaction questionnaires is in line with previous research demonstrating that more positive coparenting interactions are related to a higher quality of coparental relationship (Baker et al., 2010). It is of interest to note that the coparental positive change was stronger in the affective behavior microlevel

coding than in the self-report questionnaires, which suggests that microlevel analysis gives results that are slightly different from self-reported measurements. The fact that couple A's positive affective behavior change was not reflected in the romantic satisfaction questionnaires contrasts with previous research showing that the quality of couple interactions is associated with the quality of romantic satisfaction (e.g., Rogge et al., 2006). Hence, we can assume that changes in couple A's affective behavior are not just as much a function on an improvement in overall satisfaction.

Couple B's results contrast with previous research suggesting that negative interactions are related to hostile-competitive coparenting (McHale, 1995) and lower relationship satisfaction (Friend et al., 2017). A discrepancy is therefore also observed here between observational results and questionnaires. Self-report questionnaires provide information on an individual's perceptions, whereas observational methods capture relational dynamics by providing direct data on them (B. R. Baucom & Crenshaw, 2019). Therefore, data collected via observational coding by a third party are also independent from potential memory or social desirability bias, which could be present in couple B's self-reports. Finally, this gap in the results highlights that observational measurements enable researchers to capture unique and specific dynamics of couples' interactions, which provide additional information to data collected through self-report measures. Therefore, future studies should consider more frequently integrating observational methods in addition to self-report measurements to investigate couple interactions (Darwiche & de Roten, 2015).

The clinical analysis showed that the interactional dynamic of couple A slightly and positively evolved within therapy sessions. Marc and Emily's coparental interactions and relationship seem to have been reinforced during therapy. However, their romantic distress remained after terminating therapy. We could hypothesize that

during therapy sessions, the couple recognized their coparental relationship as a strength which might have led them to consolidate their coparental interactions and relationship. Both parents may have been particularly motivated to improve their coparenting relationship for their children's benefit. For couple B, the clinical analysis revealed the presence of several coparental conflicts that could not be settled during the six therapy sessions. We can hypothesize that the brief therapeutic setting might not have been enough psychoeducational and suitable for a couple that appeared chronically distressed.

Taken together with previous research, our study was intended to explore processes within the coparental relationship in addition to those present in the romantic relationship in a sample of parent couples undergoing couple therapy. To date, empirical literature describing how communication influences relationship outcomes has mainly focused on interactions taking place within romantic relationships and their links with romantic satisfaction. Investigating the evolution of the coparental relationship remains an atypical scope in couple therapy. Our findings support previous research results indicating that the coparental and romantic relationships do not necessarily evolve jointly (Le et al., 2016). Therefore, future studies should consider exploring the romantic and coparental relationships separately.

In the context of frequent separations between couples, research efforts highlighting changes in the coparental relationship within couple therapy appear highly relevant and important (for a systematic review and meta-analysis of coparenting programs, see Eira Nunes et al., 2020). Literature has demonstrated broadly that coparental satisfaction is significantly linked with well-being, child rearing, and child adjustment (Bodenmann, 2016). Parents having constructive coparental interactions and reporting satisfaction in their coparental relationship seem

more likely to define parenting goals together and provide mutual support related to child rearing (Holland & McElwain, 2013). Finally, results from a meta-analysis underline that coordination among adults responsible for the care and education of children is significantly related to fewer internalizing and externalizing symptoms within their child/ren (Teubert and Pinquart, 2010). Therefore, reinforcing the coparenting relationship can constitute a protective factor for children whose parents consider separation or divorce.

Limitations

The present study has some limitations. First, this contrasting case study is a first exploration and step, and the results will need to be replicated with a subsample of 65 parent couples for whom data for pre- and post-intervention analyses of affective behavior are available within the ongoing RCT's expected total sample of $N = 80$ couples with pre-post intervention data. This will allow further testing of our hypothesis that affective behavior in parent couples' interactions before entering couple therapy could be predictive of their progress in romantic satisfaction, coparental satisfaction, and overall individual symptomatology (e.g., propensity to anxiety and depressive symptoms) between pre- and post-intervention assessments. Second, due to the small sample size, we analyzed the partners' nonverbal and verbal affective behavior independently. Nonetheless, as our data were drawn from couples, we can still postulate an interdependence and interconnectedness within our findings. The broader sample from the ongoing RCT will additionally make it possible to: (1) use data analytic models specifically suited to dyadic data, such as actor-partner interdependence models or growth-curve modeling (Kenny et al., 2006), and (2) analyze different patterns of affective behavior change, including a positive to negative affect behavior change. Third, we cannot rule out that a therapeutical approach focused

on affective behavior (e.g., Halford et al., 2003; Gottman & Schwartz Gottman, 2008; Bodenmann et al., 2014) might have led to other results. The systemic approach incorporates the observation of affective behavior; nevertheless, it does not involve systematic therapeutic work on this aspect as do other models. One limitation is that the therapists had general guidelines for their interventions, which makes it difficult to know whether the treatment received by the couples was comparable. Another important limitation is related to the fact that only the first author coded the affective behavior; this limitation is balanced by the fact that the first author was qualified as an expert coder. Furthermore, the affective behavior coding might have influenced the clinical analysis, given that it was conducted by the same members of the research team. However, the potential bias is compensated by the therapists' contribution to the clinical analyses. Finally, we cannot exclude the possibility that external factors or factors specific to the participants influenced the results, such as between-session events or participants' disposition toward change, as we only integrated an analysis of the processes within therapy sessions.

Conclusion

Our study is a first step toward investigating coparental relationships through observed coparental interactions with parent couples within a clinical setting. Observing couples' interactions makes it possible to apprehend a couple's conflict in a somewhat realistic setting, compared to self-report measures. The results are therefore meaningful to clinicians and clinical training. Previous research has stressed the importance of teaching clinicians to detect negative nonverbal affective behavior within couples' interactions (J. Patterson et al., 2012). Our results can prompt couple therapists on the importance of considering micro-observational research results on nonverbal and verbal affective behavior to allow them to identify their clients'

affective behavior changes. In the last few decades, research has highly been influenced by narrative therapy and other postmodern approaches, and their reluctance to observe, comment upon, and intervene with couple's interactive behavior. Hence, our study can contribute to the existing body of research that focuses on specific practices for working with affective exchanges in couple therapy (e.g., Epstein & Zheng, 2017; S. M. Johnson, 2020).

In this chapter, the study aimed at exploring the process-related aspects of couple interactions in depth by including pre- and posttherapy examinations of the interactions, self-reports of the coparenting and romantic relationships, as well as the clinical analysis of therapy sessions for two couples of parents.

The results from the two contrasted cases demonstrated that for Couple A both partners mainly displayed negative affective behaviors before therapy and mostly positive behaviors after therapy. Whereas for Couple B, both partners displayed a majority of negative affective behaviors before and after therapy.

Findings concerning the reported coparenting and romantic satisfaction differed from the couples' affective behavior: Couple A's coparenting satisfaction slightly increased and the romantic satisfaction somewhat decreased, whereas couple B's coparenting satisfaction remained stable, and the romantic satisfaction slightly increased between the pre- and post-therapy assessments. This showed that the observed changes in the couple interactions did not consistently align with self-reported changes.

However, the results demonstrated that the change in the couple interactions did align with the clinical analysis of therapy sessions, as the interactional quality of couple A slightly improved within therapy sessions, whereas Couple B exhibited poor interactional quality throughout therapy sessions (e.g., repeated criticism and contempt).

The study presented in the next chapter expands results from the first study by focusing on a larger sample of parent couples in couple therapy. This will allow to explore change in the coparenting relationship from pre- to posttherapy by observing the couple interactions and including reports of coparenting quality.

Chapter 3. Coparenting Change after Couple Therapy Using Self-Reports and Observational Data

This chapter is based on Liekmeier, E., Vowels, L. M., Antonietti, J.-P., Bodenmann, G., & Darwiche, J. (2023). Coparenting change after couple therapy using self-reports and observational data. *Journal of Marital and Family Therapy*, 49(3), 675–691. <https://doi.org/10.1111/jmft.12647>

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Abstract

Parent couples are involved in a coparenting bond and in a romantic relationship. Research on couple therapy has mainly explored the impact of couple therapy on the romantic relationship, however little is known of how couple therapy affects the coparenting relationship. Self-reports of positive and negative coparenting and observed emotional behavior in coparenting-related conversation tasks were assessed pre- and post-therapy (six months interval) in 64 mixed-sex parental couples. Results showed that mothers and fathers reported more positive coparenting after therapy. There were no significant changes in the reported negative coparenting, and in the emotional behavior. Exploratory analyses indicated gender differences in emotional expression. The findings suggest that fathers might have been more active in the coparenting conversation after therapy.

Introduction

Couple therapy is commonly used, and has been validated as an effective approach, to help couples facing relational distress (Bradbury & Bodenmann, 2020; Rathgeber et al., 2019; Von Sydow et al., 2010). Many couples engaging in couple therapy are as well parents (Klann et al., 2011). It is thus of interest to work not only on their relationship as partners (romantic relationship), but also on their relationship as parents (coparenting relationship) because difficulties may arise in either or both relational domains (Darwiche, et al., 2022). The systemic approach (Cox & Paley, 1997; Minuchin, 1974) considers the different subsystems when treating couples, including the romantic and the coparenting relationships. Previous research has shown that couple therapy is efficient in improving individual symptomatology and marital satisfaction (Fischer et al., 2016) but less is known about improvements in the coparenting subsystem (Darwiche et al., 2022; Zemp, Milek, et al., 2016). To address this gap in the literature, the present study aimed to assess change in the quality of the coparenting relationship of couples before and after brief systemic couple therapy. To provide a comprehensive assessment of coparenting change, improvement in coparenting quality was examined by considering parents' perceptions of coparenting quality and their observed emotional behavior in a coparenting-related conversation task.

Perceptions of the Quality of the Coparenting Relationship as a Clinical Outcome

Coparenting is a key dimension of the couple and family functioning (Feinberg et al., 2012). The act of coparenting entails coordination between adults responsible for the education and care of children and it includes four overlaying domains: coparental support/undermining, childrearing agreement, joint management of family dynamics, and division of labor (Feinberg, 2003). The coparenting and romantic

relationships are related to one another. There can be spill-over (e.g., one partner's perceived coparenting satisfaction can positively or negatively affect their own romantic satisfaction; McDaniel et al., 2018) or cross-over (e.g., one partner's coparenting satisfaction can positively or negatively impact their partner's romantic satisfaction; Pedro et al., 2012) effects from one relationship to the other. Thus, the quality of the coparenting relationship has repercussions for the romantic relationship. However, they do not necessarily evolve jointly, and the coparenting bond is unique as it will persist even after a potential rupture of a romantic bond. Research evidence has highlighted the importance of the coparenting relationship in couples who also coparent (McHale & Lindahl, 2011). As the quality of the coparenting relationship has repercussions on children's well-being, many preventive or short-term interventions have been developed, for example with at risk families (e.g., low income, low education; Eira Nunes et al., 2020), to improve family functioning and thus benefit the children. A recent systematic review and meta-analysis on coparenting programs showed an overall improvement in the quality of the coparenting relationship following an intervention (Eira Nunes et al., 2020). In the context of relationship education, three studies explored changes in coparenting due to participating in such programs (Adler-Baeder et al., 2018; Feinberg et al., 2016). These studies showed significant improvements in coparenting after the intervention. Similarly, a meta-analysis by Hawkins et al. (2022), investigating whether couple relationship education programs have an impact on coparenting, support these findings reporting a small but significant effect size ($d = 0.07$). Authors state that relationship education programs yielded similar effects on coparenting than programs directly addressing the enhancement of this target variable, which illustrates the efficacy of couple-based interventions.

Besides the literature on coparenting change in coparenting programs, so far only few studies have investigated changes in the quality of the coparenting relationship after couple therapy. One study by Vaudan et al. (2016) showed that couples reported a higher coparenting alliance at the end of brief systemic therapy (i.e., not directly targeted at coparenting issues). Another study by Gattis et al. (2008) explored the level of interparental conflict related to children and parenting (i.e., an aspect of the coparenting relationship) and showed that both parents reported significantly less conflict over childrearing after behavioral couple therapy (i.e., not specifically focused on coparenting issues). However, one study by Klann et al. (2011) demonstrated no decrease in conflict over childrearing after ending marital counseling with varying therapeutic orientations (e.g., psychodynamic, integrative, systems-communication theory). Vaudan et al.'s (2016) study provided preliminary data on an initial version of brief systemic couple therapy. Our study aims to extend their findings by examining coparenting in a larger sample. Additionally, our study investigates the coparenting quality in a brief treatment (i.e., six sessions), whereas Gattis et al. (2008) provided an average of 26 therapy sessions. Furthermore, our study focuses on a specific therapeutic approach (i.e., systemic therapy), whereas Klann et al. (2011) included several therapeutic modalities. Finally, Gattis et al. (2008) and Klann et al. (2011) solely investigated negative coparenting (i.e., conflict over childrearing), while we also explore positive coparenting in our study.

Furthermore, these studies have investigated changes only in the perceived quality of the coparenting relationship by gathering data with self-report questionnaires. These measures enable us to collect information on someone's perceptions, but they are prone to possible social desirability or memory bias, and they cannot fully investigate the complexity of dyadic interaction in general and specifically

related to coparenting (Friedlander et al., 2019). Observational measurements make it possible to apprehend specific and unique dynamics of couples' interactions in addition to data gathered through self-report measures, as they produce direct data on couple interactions (Liekmeier et al., 2021). It is important to include observational measurement when studying couple functioning, especially in couple therapy, as the observation of couples' interactions constitutes a robust indicator of couple functioning (Heyman, 2001) and it gives access to clinically significant indicators of which the partners may not directly be aware of (Imesch et al., 2019).

Observation of Couple Interactions in a Clinical Setting

Many results in the literature on couples demonstrate that the analysis of couple interactions is important for understanding couple relationship development and maintenance (Gottman et al., 2015; M. D. Johnson et al., 2022) and perceiving change in therapy (K. J. W. Baucom et al., 2015; Snyder et al., 2002). A recent meta-analysis including a wide variety of theoretical orientations (i.e., behavioral, emotion-focused, integrative) showed that couple therapy has significant effects on couples' observed communication (i.e., positive and negative behavior) (Roddy et al., 2020). The emotional behavior is one indicator that has been used in prior research to assess the observed quality of couple interactions. The observation of emotional behavior is used to explore the emotional aspects in couple interactions and it can be assessed in verbal behaviors such as validation, affection, withdrawal, criticism, and contempt and/or positive and negative nonverbal behavior such as smiling and finger pointing (Coan & Gottman, 2007). Emotional behavior has been studied extensively in various couple therapy approaches (i.e., behavioral, systemic, and emotion-focused). Previous studies have demonstrated that emotional behavior predicts couples' response to several types of couple therapy (i.e., behavioral, systemic, and emotion-focused; Jacobson & Addis,

1993; Snyder et al., 2002), and most research results indicated that couples were displaying less negative and more positive emotional behaviors after traditional and integrative behavioral couple therapy (e.g., K. J. W. Baucom et al., 2015; Sevier et al., 2008). Together, the results of these studies demonstrate that emotional behavior can be used as a reliable indicator of success in couple therapy.

The Present Study

This study was part of a larger randomized controlled trial (RCT) investigating the efficacy of the Integrative Brief Systemic Intervention for parent (Darwiche et al., 2023). The couples received treatment for six sessions over six months. Coparenting (i.e., positive and negative) was explored through self-reports before and after therapy. Couples' emotional behavior was assessed pre- (i.e., directly before the couple's first therapy session) and post-therapy (i.e., directly after the couple's last therapy session) by coding couple interactions on subjects pertaining to the upbringing of their child or children (e.g., children's education or outings). Following Sevier et al.'s (2008) method, the emotional behavior data was analyzed by conducting a Principal Component Analysis (PCA) to reduce the dimensionality of the emotional behavior and the number of individual codes.

The aims of this study were to explore whether the quality of the coparenting relationship changed after therapy, as measured by self-reported change and observed emotional behavior change. Building on past research results, our hypotheses were:

H1: Mothers and fathers will report more positive coparenting and less negative coparenting after therapy.

H2: Mothers and fathers will display more positive emotional behaviors (i.e., validation, affect, interest, constructive criticism, and emotional disclosure) and less

negative behaviors (i.e., criticism, domineering, stonewalling, defensiveness, contempt, belligerence, and speech interruption) after therapy.

Method

Participants

The initial sample included 84 mixed-sex parental couples ($N = 168$ participants) presenting in couples therapy clinics. Of those, eight did not consent to participate in the conversation task, four were excluded due to bad image quality of the recordings, six did not fill out all requested self-reports, and one couple was excluded because of acquaintance status with the first author. Couples were excluded from the sample if there were no data available for the conversation task or no data on the coparenting relationship self-reports. We computed two-sided t-tests to assess whether the excluded participants differed from our sample in terms of their positive and negative coparenting, as well as their romantic relationship distress at baseline. None of the results were significant, thus there were no differences between the excluded couples and our sample (see Supplemental Table S1).

The final sample comprised of 64 mixed-sex parental couples. Participants were 39 years old on average (mothers: $M = 38.9$ years ($SD = 7.0$), and fathers: $M = 40.6$ years ($SD = 7.7$)) and had been in a relationship for 12 years ($SD = 7.1$). Most participants were married (75%) and the rest were cohabiting. The couples had an average of two children and the youngest child was in average 5 years old ($SD = 4.8$). They reported having difficulties in their relationship for an average of four years, and most participants identified their main presenting issues to be related to their romantic relationship (74.2%, $n = 95$), more specifically communication difficulties were reported as the main issue in their romantic relationship. The highest level of education completed by participants was a university degree (45.3%, $n = 58$), followed by the

Federal Diploma of Vocational Education and Training (22.7%, $n = 29$), high school (9.4%, $n = 12$), and middle school (7.8%, $n = 10$). Finally, some participants also reported their education level as “other” (19.0%, $n = 14.8$). Given that this study was conducted in Switzerland, information on participants’ racial/ethnic background was not collected.

Couples’ relationship satisfaction was assessed prior to entering treatment with the Dyadic Adjustment Scale (DAS; Spanier, 1976). Mothers’ satisfaction ($M = 89.6$, $SD = 19.4$, range = 18.0–122.5) was significantly lower ($t(63) = -3.73$, $p < .001$, $d = 0.43$) than fathers’ ($M = 96.8$, $SD = 13.1$, range = 56.3–135) at intake, and both their average relationship satisfaction was below the established cut-off indicating romantic relationship distress (97.5; Funk & Rogge, 2007).

Based on a sensitivity power analysis for data from 64 couples, we had 23% power to detect a small effect size ($r = 0.12$; Lovakov & Agadullina, 2021), 70% power for a medium effect size ($r = 0.24$; Lovakov & Agadullina, 2021), and 99% power for a large effect ($r = 0.41$; Lovakov & Agadullina, 2021).

Treatment

Each couple received an average of six therapy sessions ($SD = 0.6$), each spaced about one month apart. The couples were randomly assigned to one of the treatment conditions of the RCT and received either the Integrative Brief Systemic Intervention (IBSI; Darwiche et al., 2022) or Brief Systemic Therapy (BST; i.e., standard brief systemic couple therapy). The IBSI is a manualized intervention specifically meant for parent couples. It focuses on the difficulties the couples face by targeting both the romantic and coparenting relationships and consists of three phases. In the IBSI, the therapist does not give priority to work on the coparenting relationship over other relationship-related concerns, and the amount of work done on the

coparenting or romantic relationship is kept open (Darwiche et al., 2022). The three phases of the IBSI and the therapeutic core principles are described in more detail in Darwiche et al. (2022). The BST mainly addresses the romantic relationship, however BST therapists are equally likely to work with other kinds of relationships, such as the coparenting or the parent-child relationship, in addition to families of origin and family functioning. In both treatments, therapists employed techniques and concepts drawn from various schools of systemic psychotherapy, including the transgenerational, strategic, or structural models (Haley, 1963; Minuchin, 1974; Selvini Palazzoli, 1988).

Procedure

The study was carried out with the approval of the cantonal ethics committee of the Canton de Vaud in Switzerland (CER-VD). The inclusion criteria for all RCT participants were as follows: (a) participants were cohabiting, (b) had at least one child up to the age of 16, and (c) were in a coparenting relationship regarding the child(ren). Couples were not eligible if they did not meet all three inclusion criteria or if they experienced a crisis in which participating in the study could impair the therapeutic process. The clinics delivering the treatment recruited the participants for the research team by suggesting the research to eligible clients presenting to them. All participants provided written informed consent to either being audiotaped or videotaped during the therapy sessions in addition to being filmed during conversation tasks before and after therapy. Data collection took place from May 2015 until September 2021.

Prior to the first therapy session, the research team contacted the couples to complete the pre-therapy evaluations. Participants completed self-reports and engaged in coparenting-related conversation tasks both before the first and after the last therapy sessions. The pre- and post-therapy assessments were provided by the research team and filled in (independently from each other) by the participants in their homes.

Treatment sessions were conducted in a clinic, and the couples received either the Integrative Brief Systemic Intervention (Darwiche et al., 2022) or brief systemic therapy (i.e., standard brief systemic couple therapy). In this sample, every couple received six therapy sessions, each spaced about one month from the other.

The conversation tasks occurred either in the couples' households or in the practice. In the main RCT study (Darwiche et al., 2023), participants completed a total of four observational conversation tasks adapted from Baker et al. (2010) for 20-minutes (i.e., five-minutes each). During these tasks, they discussed agreement and disagreement topics both in their romantic and coparenting relationships. As the focus of the study was to investigate coparenting quality through emotional behavior, we excluded the discussions on the romantic relationship. Due to the micro-coding of emotional behavior being very time-intensive (i.e., one hour of coding for a 5-minute of conversation), we were only able to code one coparenting task. Exploratory coding showed that there was more emotional variability in the disagreement task compared to the agreement task, therefore we chose to include the coparenting disagreement conversation task. Both parents were given a list of subjects pertaining to coparenting (e.g., outings, bedtime, mealtime, or education). Both parents were asked to select three topics of disagreement, from either the list or from their personal choice. The researcher then gathered the sheets and verified whether the parents had common topic. If they had, then the researcher recommended that the parents talked about this subject. If they had not, the researcher randomly chose a topic selected by either parent or questioned the other if they agreed to discussing the subject.

The couples were instructed to: "Discuss [chosen topic], a topic on which you disagree as parents or that has caused arguments or tension. Start by discussing the subject and what could have caused the argument, then try to think about ways to solve

the disagreement. The objective is not that you end up finding one solution, but that you try to work together toward a resolution. You now have five minutes.” The procedure was reiterated for the post-therapy conversation task. Every couple was given \$100 for their participation after having completed the post-therapy measurements.

Measures

Positive Coparenting

Positive coparenting was assessed by measuring the strength of the self-perceived alliance across parents with the Parenting Alliance Measure (Konold & Abidin, 2001). This self-report consisted of 20 items and measured parenting aspects such how communicative, mutually respectful, and cooperative the parents were regarding caring for their children (e.g., “My child’s other parent and I agree on what our child should and should not be permitted to do”). Every item was assessed on a 5-point Likert-scale (1 = strongly disagree, 5 = strongly agree). Higher scores reflected more positive coparenting. The original validation of the scale demonstrated high internal consistency (mothers: $\alpha = .97$; fathers: $\alpha = .96$) and results of the French adaptation of this scale supported its construct validity (Rouyer et al., 2015). In our sample, internal consistency before therapy, as measured by Cronbach’s alpha, was excellent for mothers ($\alpha = .95$) and fathers ($\alpha = .95$).

Negative Coparenting

Negative coparenting was evaluated by measuring the parents’ perceptions of conflict (e.g., “My partner and I start to argue if we talk about childrearing”) and triangulation (e.g., “My partner uses our child to assert his interest against me”) using the Coparenting Inventory for Parents and Adolescents (Teubert & Pinquart, 2011; Zimmermann, et al., 2022). For this study, only the conflict and triangulation subscales

for mothers and fathers ($N = 16$ items per parent; eight items per subscale) were used. Each item was rated on a 5-point Likert-scale (1 = totally false, 5 = totally true). Higher scores indicated more negative coparenting. The original validation of the scale showed that all subscales had satisfactory to high internal consistencies (i.e., Cronbach's alpha ranging from .65 to .88; Teubert & Pinquart, 2011). This scale was also translated and validated in French (Zimmermann et al., 2022), and results showed reasonable to good internal consistency (i.e., Cronbach's alpha ranging from .66 to .90). In our sample, internal consistency before therapy was good for mothers ($\alpha = .84$) and fathers ($\alpha = .87$).

Emotional Behavior

Verbal emotional behaviors in the pre- and post-therapy coparenting-related conversation tasks were coded with an adapted version of the Specific Affect Coding System (SPAFF; Bodenmann, 2011; Gottman & Krokoff, 1989). The microanalytical SPAFF is an externally validated approach for coding observational data, and it has been used extensively, especially for emotional behavior among couples (Kuster et al., 2015; Zemp, Nussbeck, et al., 2017).

The SPAFF consisted of observational scales divided in three main categories: verbal positivity, verbal negativity, and neutral/nothing (Zemp, Bodenmann, et al., 2016). This coding system permitted the observation of discrete behaviors. The verbal positivity category consisted of five subcategories: interest, validation, affect/caring, emotional disclosure, and constructive criticism. Verbal negativity was composed of seven subcategories: criticism, defensiveness, domineering, stonewalling, speech interruption, contempt, and belligerence. In the adapted version of the SPAFF, the emotional behaviors are hierarchically ranked according to their intensity (i.e., interest is the most positive, and belligerence is the most negative). The ranking allows the

coder to discriminate which code to assign when two different behaviors appear in the same interval, as the coding rule states that the most negative behavior prevails.

The observational coding procedure had two steps: (1) viewing the video with no coding, and (2) coding the verbal behavior. Categories were coded independently for women and men; thus, these steps were then replicated for the coding of the other parent. A master coder from the University of Zurich provided training to the first author. The training consisted of 12 hours of training, four hours of supervision, and 60 hours of coding training tapes. At the end of the training, the first author achieved high interrater reliability with the master coder (i.e., Cohen's kappa $\geq .90$).

Following O'Connor and Joffe's (2020) recommendations, a subset of videos (20% of the sample) was coded by multiple coders to calculate interrater reliability with Cohen's kappa. The interrater reliability analysis revealed substantial agreement between the multiple coders ($\kappa = .63$; Hallgren, 2012).

Data Analysis

Zero-order correlations among all variables in the study are reported in Supplemental Table S2, and zero-order correlations between each emotional behavior and the self-reports are shown in Supplemental Tables S3 and S4. All data analyses were performed using R (Version 4.2.2; R Core Team, 2021). To reduce the dimensionality of the emotional behavior data based on a correlation matrix, we computed a principal component analysis (PCA) with the package FactoMineR (Lê et al., 2008) on the fathers' and mothers' pre-and post-therapy verbal emotional behavior. The pre- and post-therapy emotional behavior was combined in the analysis to ensure that the same construct before and after therapy would be measured in order to compare both time points. We ran a parallel analysis (Horn, 1965) with 300 iterations using the 90 centile estimate and used Cattell's scree test (Cattell, 1966) to determine

the numbers of components to retain from the PCA. In line with previous recommendations, we computed the pre- and post-therapy component values for mothers and fathers, and we reported coordinates and contributions (in percentage) (Abdi & Williams, 2010; Husson et al., 2017).

Shapiro-Wilk (1965) tests were used to examine data normality before running the analyses. These tests showed that our data were normally distributed, thus the changes from pre- to post-therapy in coparenting and in the emotional behavior components in mothers and fathers were evaluated with MultiLevel Modeling (MLM) using the package *dyadr* (Garcia & Kenny, 2018). Furthermore, we conducted exploratory analyses to investigate the change over time and in gender for each emotional behavior using Poisson regression models (Zeileis et al., 2008). While we did not make any a priori hypotheses on gender differences, we included gender in the models because we had distinguishable dyads. Therefore, these analyses should be treated as exploratory.

Finally, as our data were drawn from a randomized control trial with two distinct treatment conditions, we controlled for this in all our analyses. We also controlled for baseline romantic relationship quality as both the romantic and coparenting relationship are associated with each other.

Results

Preliminary Results

Before running the PCA, we assessed the frequencies of appearance of each verbal emotional behavior code for mothers and fathers in the pre- and post-therapy conversation tasks. *Affect/caring* (code 3) and *stonewalling* (code 9) appeared only once in the entire dataset and *belligerence* (code 12) appeared 13 times in the entire dataset, therefore these codes were removed from the data. Results from Cattell's scree

test identified one component to retain from the verbal emotional behavior data. The component explained 23.70% of the total variance (Axis I adjusted eigenvalue = 1.77) and the coordinates and the contributions are displayed in the Supplemental Table S5. The results showed that the component was composed of positive and negative emotional behaviors that were distributed on a continuum from positive to negative emotional behavior based on their correlation with the component. We used the average contribution (i.e., 100% divided by the number of variables introduced into the analysis) to interpret the component. Interest and validation were the emotional behaviors that contribute the most to the positive pole and domineering and contempt were two very negative emotional behaviors that contribute the most to the negative pole. The coordinates on the component of each participant were calculated at pre- and post-therapy. Given that the component could be understood as a continuum between positive and negative emotional behaviors, if the coordinate's value was positive, it indicated that the person was showing more positive emotional behavior than negative emotional behavior and the opposite if the coordinate's value was negative.

Change in Coparenting from Pre- to Post-Therapy

Descriptive statistics for positive and negative coparenting scores, and emotional behavior for mothers and fathers in pre- and post-therapy assessments are presented in Supplemental Table S1. Results from MLM are shown in Table 1.

Table 1*Multilevel Linear Modeling Analyses for Gender and Time Predicting Positive and Negative Coparenting, and Emotional Behavior*

Variables	Estimate	SE	<i>t</i>	<i>p</i>	<i>d</i>	95% CI		<i>R</i> ²
						Lower	Upper	
Positive Coparenting								.30
Intercept	1.92	0.25	7.71	< .001	-	1.44	2.41	
Gender	-0.10	0.04	-1.14	.255	-0.16	-0.13	0.04	
Time	0.17	0.06	2.70	.007	0.27	0.05	0.29	
Gender x Time	0.01	0.06	0.12	.908	0.01	-0.11	0.12	
Baseline Romantic Relationship Quality	0.02	< 0.01	7.82	< .001	-	0.01	0.02	
Treatment	0.03	0.12	0.30	.768	-	-0.20	0.26	
Negative Coparenting								.24
Intercept	2.52	0.23	11.00	< .001	-	2.07	2.97	
Gender	< 0.01 ^a	0.04	0.05	.966	0.01	-0.08	0.08	
Time	-0.07	0.06	-1.27	.201	-0.13	-0.18	0.04	
Gender x Time	-0.02	0.05	-0.43	.670	0.04	-0.13	0.08	
Baseline Romantic Relationship Quality	-0.01	< 0.01	-6.29	< .001	-	-0.02	-0.01	
Treatment	-0.03	0.11	-0.32	.751	-	-0.25	0.18	
Emotional Behavior								.07
Intercept	-1.36	0.58	-2.34	.020	-	-2.49	-0.22	
Gender	-0.42	0.10	-2.15	.033	0.29	-0.40	-0.02	
Time	0.01	0.14	0.04	.967	< 0.01	-0.27	0.28	
Gender x Time	0.08	0.14	0.62	.533	0.06	-0.18	0.35	
Baseline Romantic Relationship Quality	0.01	0.01	2.31	.021	-	0.00	0.02	
Treatment	0.12	0.27	0.44	.663	-	-0.42	0.66	

Note. Boldface values show the significant *p*-values. We controlled both for baseline romantic relationship quality and treatment condition in our analyses. Baseline romantic relationship quality had a significant impact on all three outcomes, whereas treatment condition did not.

^a means that the value is smaller than 0.01, but not below zero.

Results indicated that time had a significant impact on positive coparenting ($b = 0.17$, $t(255) = 2.70$, $p = .007$, $d = 0.27$). Thus, mothers and fathers reported more positive coparenting after therapy compared to before therapy. There were no significant results for negative coparenting. Only gender had a significant impact on emotional behavior ($b = -0.42$, $t(255) = -2.15$, $p = .033$, $d = 0.29$). Results showed that fathers displayed significantly more positive emotional behavior than mothers.

Exploratory Analyses

In addition to the PCA, we decided to look closer at the change in each emotional behavior. Thus, we conducted Poisson Generalized Linear Models as exploratory supplemental analyses. The results for all the emotional behaviors are presented in the Supplemental Table S6. The findings indicated that mothers ($\beta = -0.40$, $z = -3.60$, $p = .003$) displayed significantly less domineering, whereas fathers' ($\beta = 0.77$, $z = 2.83$, $p = .045$) showed significantly more domineering after therapy. None of the other emotional behaviors in mothers or fathers changed significantly after therapy. Additionally, we found a significant gender effect on defensiveness ($\beta = 0.66$, $z = 639.6$, $p < .001$) and domineering ($\beta = -2.33$, $z = -9.34$, $p < .001$), meaning that fathers showed significantly more defensiveness and less domineering than mothers. Finally, we also tested for Time x Gender interaction. The results showed that fathers' defensiveness decreased significantly more than mothers' ($\beta = -0.13$, $z = -125$, $p < .001$) and that fathers' domineering increased significantly more than mothers' ($\beta = 1.16$, $z = 3.97$, $p < .001$) from pre- to post-therapy.

Discussion

The coparenting relationship is important for couple and family functioning, as well as for child development. Previous research shows that both coparenting (Vaudan et al., 2016) and emotional behavior (K. J. W. Baucom et al., 2015) can be improved

in systemic and behavioral couple therapy respectively. Our results expand previous findings by investigating reported coparenting and observed emotional behavior in coparenting-related disagreement conversation tasks in a sample of parent couples receiving brief systemic couple therapy. Taken together, our results indicate positive signs of change in the quality of the coparenting relationship in settings of brief systemic couple therapy with parents. We outline these below for each hypothesis.

Our findings indicate that mothers and fathers reported significantly more positive coparenting after the provided treatments. Thus, our results align with previous research by Vaudan et al. (2016) showing that parents reported better coparenting quality after brief systemic couple therapy. Interestingly, there were no significant results for the reported negative coparenting, which contrasts with previous findings from Gattis et al. (2008) demonstrating that parents reported less conflict over childrearing (i.e., negative coparenting) after behavioral couple therapy. This may be because Gattis et al. (2008) provided more therapy sessions to their participants. However, our results align with the study by Klann et al. (2011), that also did not find any differences in the reported negative coparenting.

Our results did not provide support for the hypothesis that the emotional behavior would be more positive and less negative after brief systemic couple therapy, as we found no significant impact of time on the emotional behavior component. One possible reason could be the level of romantic relationship distress in our sample. In fact, previous research showed that there seems to be a greater interactive rigidity in particularly distressed couples (Favez, 2013). This might also be because of differences between both data collection methods. The partners were asked to assess their relationship in general in the self-report questionnaires, whereas in the coparenting-related conversation task they were required to discuss a specific

disagreement topic in their relationship. It could be that the global perception of the partners' coparenting may change more quickly than partners' actual behavior toward each other or that the limited time frame (i.e., five minutes) of the conversation task was not enough to observe potential changes in the behaviors. Furthermore, a previous study showing an improvement in emotional behavior from pre- to post-therapy (K. J. W. Baucom et al., 2015) provided a longer and more intense treatment (i.e., one session of behavioral couple therapy per week over 26 weeks). Therefore, it would be important to test whether perceptions and behaviors change at a different pace.

However, our results showed a significant gender effect indicating that emotional behavior displayed by fathers was more positive than the emotional behavior from mothers. Results from the exploratory analyses on the emotional behavior categories can be used to clarify this finding. In fact, they showed that mothers tended to be more domineering overall, whereas fathers were more defensive. The hierarchical structure of the emotional codes might explain this finding as defensiveness is considered a more positive emotional behavior than domineering. Additionally, these results are consistent with previous literature investigating the coparenting relationship in mixed-sex parental couples. Previous studies highlighted this pattern in which mothers tend to position themselves as the experts (i.e., being domineering or gatekeeping), whereas fathers may retreat from fathering (i.e., defensive) (Altenburger et al., 2018; Schoppe-Sullivan et al., 2008).

Furthermore, our study was conducted in Switzerland with mainly Swiss parental couples, thus the results from our exploratory analyses also align with the Swiss context. In fact, the family model and values are still fairly traditional and gendered and the most widespread arrangements (66% of the households with the youngest child aged between 4-12 years) are the ones in which the fathers work full-

time, while the mothers are either economically inactive or work part-time (Federal Statistical Office, 2021). Thus, in the majority of Swiss households, the mothers still spend more time with childcare than fathers, which supports the hypothesis that they would position themselves as being the expert (i.e., being domineering) in coparenting-related conversations.

Finally, the exploratory analyses showed that mothers were less domineering after therapy, whereas fathers were more so (i.e., they were taking up more space in the conversation and asserting their own position). At first, these results might seem like a negative outcome, however, one possible interpretation is that the interactions between fathers and mothers became more balanced after therapy. For instance, it could be that mothers became more willing to give fathers space in the coparenting relationship and fathers became more assertive or involved.

Strengths, Limitations, and Future Directions

The present study had several strengths. We used longitudinal dyadic data collected before and after brief systemic couple therapy, which enabled us to explore changes between both assessments in each partner. Additionally, we assessed the emotional behavior with an observational measure which made it possible to capture relational dynamics that are independent from possible social desirability or memory bias.

Apart from its strengths, this study also includes some limitations. First, the sample size was relatively small meaning that we could not detect small effects. In fact, some of the results in the study were marginal and with a larger sample size may have been significant. Therefore, future research is needed to examine these associations in a larger sample.

Second, some limitations pertain to the observation of emotional behavior in the couples' interactions. Specifically, given the short length of the conversation task (five minutes) some behaviors might have shown up later in the discussion, if it had been longer, as some couples might take longer to escalate or deescalate. Additionally, we did not control for whether the couples discussed the same disagreement pre- and post-therapy, which might also have affected our results on the observed emotional behavior as some topics might be more sensitive and triggering than others. Moreover, even though the interrater reliability showed substantial agreement in the observational data, it also indicated considerable variability in the coding. Thus, the power was likely lowered which might also be one of the reasons why the observational data did not provide significant results. To mitigate these limitations, future studies could combine both methods and assess couples' interactions with observational methods and self-report in which the parents are specifically asked to report about the discussed topic in the observational assessment. Taken together, using both methods would combine the strengths and limitations of each method and would make it possible to obtain a more faithful picture of the couple's interactions.

Finally, this study was also specific to coparenting and brief systemic couple therapy, consequently we cannot compare or attest whether the parents would have discussed a different topic (e.g., a topic related to their romantic relationship) differently or if the results are unique to coparenting or brief systemic couple therapy. Thus, it would be helpful if future research examined and compared couple interactions both on coparenting and romantic related topics and included self-report data on the romantic relationship; this would make it possible to investigate the emotional behavior in each conversation and explore both the coparenting and romantic relationships.

Conclusion

This study focused on parent couples undergoing brief systemic couple therapy and sought to investigate the change in the quality of the coparenting relationship by assessing couples' perceptions and observing their interactions. The results showed that couples did report more positive coparenting. However, there were no differences in the reported negative coparenting and in the observed emotional behavior. Further analyses showed gender differences in the emotional behavior suggesting that the emotional behavior displayed by fathers was less negative than mothers. Additionally, the exploratory analyses indicate that fathers might become more involved in the coparenting related conversation after therapy. The findings of this study suggest that only the positive coparenting improved after therapy and not the negative, and they also indicate that the emotional behavior did not change. However, this does not necessarily mean that the couples were distressed. In fact, previous research has shown that conflict is also present in romantically satisfied couples (Driver et al., 2012).

Finally, addressing the coparenting relationship is still unusual in couple therapy, especially when couples initial demand is based on difficulties in their romantic relationship. Previous research stresses that both the romantic and coparenting relationships are interrelated (Zemp et al., 2018), thus conflicts in either or both relationships can have consequences on child-rearing and child adjustment (Holland & McElwain, 2013). Therefore, the implications for clinical practice and training at a broader scope involve that couple therapists may wish to integrate the coparenting relationship more systematically in couple therapy in addition to addressing the romantic relationship. In fact, therapists could leverage the positive spill-over and cross-over effects between the romantic and coparenting relationships to promote change. For example, when a couple comes into therapy highly distressed

in their romantic relationship and the therapist encounters difficulties to address the romantic distress, they might be able to make use of the positive aspects in the coparenting relationship (if applicable) and carry them over to the romantic relationship.

Supplemental Tables

Supplemental Table S1

Descriptive Statistics and T-tests Comparing Included and Excluded Couples

	Excluded <i>M (SD)</i>	Included <i>M (SD)</i>	<i>t</i>	<i>p</i>
Mothers' Positive Coparenting	3.58 (0.69)	3.65 (0.76)	0.34	.732
Fathers' Positive Coparenting	3.96 (0.78)	3.89 (0.79)	0.35	.728
Mothers' Negative Coparenting	1.35 (0.60)	1.22 (0.62)	-0.83	.407
Fathers' Negative Coparenting	1.01 (0.72)	1.10 (0.64)	0.57	.571
Mothers' Romantic Relationship Quality	81.48 (20.59)	89.55 (19.41)	1.60	.113
Fathers' Romantic Relationship Quality	93.29 (20.78)	96.76 (13.14)	0.70	.489

Supplemental Table S2

Correlations Among All Study Variables and Descriptive Statistics for the Pre- and Post-Therapy Assessments

	1	2	3	Mothers <i>M (SD)</i>	Fathers <i>M (SD)</i>
Pre-therapy					
1. Positive Coparenting	0.68**	-0.46**	0.20	3.65 (0.76)	3.89 (0.79)
2. Negative Coparenting	-0.39*	0.48**	-0.23	1.22 (0.62)	1.10 (0.64)
3. Emotional behavior	0.34*	-0.16	0.62**	-0.30 (1.66)	0.22 (1.33)
Post-therapy					
1. Positive Coparenting	0.48**	-0.72**	0.41*	3.96 (0.66)	4.16 (0.59)
2. Negative Coparenting	-0.53**	0.43**	-0.28	1.01 (0.63)	0.97 (0.63)
3. Emotional behavior	0.09	-0.11	0.50**	-0.10 (1.45)	0.18 (1.36)

Note. Results show the correlations among pre-therapy variables at the top and among post-therapy variables at the bottom of the table. Correlations between mothers' variables are presented below the diagonal, between-partner correlations are presented in diagonal in bold, and father correlations above the diagonal.

*indicates $p < .01$ **indicates $p < .001$.

Supplemental Table S3*Correlations Among Each Emotional Behavior and the Self-Report Measures for the Pre-Therapy Assessment*

	1	2	3	4	5	6	7	8	9	10	11
1. Interest/curiosity	-	0.43***	0.01	0.04	-0.24	-0.19	-0.24	-0.11	-0.24	-0.05	0.26*
2. Validation	0.39**	-	0.07	< 0.01 ^a	-0.30*	-0.30*	-0.21	-0.17	-0.24	-0.27*	0.06
3. Emotional Disclosure	0.03	0.15	-	-0.15	-0.16	-0.11	-0.11	-0.05	-0.12	-0.11	0.18
4. Constructive Criticism	0.11	-0.16	-0.13	-	0.03	-0.17	-0.16	-0.15	-0.19	-0.13	0.20
5. Criticism	-0.22	-0.30*	-0.19	0.17	-	0.04	0.15	0.23	0.11	0.13	-0.08
6. Defensiveness	-0.09	-0.20	-0.14	-0.04	0.01	-	0.10	0.26*	0.35**	0.21	-0.15
7. Domineering	-0.35**	-0.28*	-0.24	-0.26*	-0.11	-0.10	-	0.26*	0.37**	< 0.01	0.02
8. Speech interruption	-0.16	-0.16	-0.19	0.04	-0.01	0.17	0.38**	-	0.34**	0.07	0.01
9. Contempt	-0.34**	-0.25*	-0.17	< 0.01	0.18	-0.06	0.31*	0.05	-	0.13	-0.05
10. Negative Coparenting	-0.11	-0.12	-0.17	0.03	-0.09	0.11	0.12	0.34**	-0.05	-	-0.46**
11. Positive Coparenting	0.30*	0.30*	0.03	0.24	< 0.01	-0.10	-0.31*	-0.29*	-0.02	-0.39**	-

Note. Correlations between mothers' variables are presented below the diagonal, and father correlations above the diagonal.

^a means that the value is smaller than 0.01, but not below zero.

*indicates $p < .05$; **indicates $p < .01$; ***indicates $p < .001$

Supplemental Table S4*Correlations Among Each Emotional Behavior and the Self-Report Measures for the Post-Therapy Assessment*

	1	2	3	4	5	6	7	8	9	10	11
1. Interest/curiosity	-	0.30*	0.03	-0.17	-0.04	-0.24	-0.27*	-0.14	-0.25*	-0.15	0.01
2. Validation	0.37**	-	0.10	-0.14	-0.12	-0.24	-0.19	-0.04	-0.19	-0.05	0.06
3. Emotional Disclosure	0.08	0.02	-	0.04	-0.12	-0.06	-0.12	-0.03	-0.16	-0.13	0.22
4. Constructive Criticism	-0.19	0.04	0.07	-	0.10	-0.19	-0.09	< 0.01	-0.10	0.13	0.03
5. Criticism	-0.29*	-0.27*	-0.20	-0.19	-	-0.02	-0.04	< 0.01	0.04	0.07	-0.03
6. Defensiveness	-0.20	0.14	-0.12	-0.16	-0.11	-	0.04	0.20	0.41**	0.06	-0.10
7. Domineering	-0.34**	-0.21	-0.15	-0.02	0.02	-0.08	-	0.34**	0.19	0.10	-0.10
8. Speech interruption	< 0.01 ^a	0.01	-0.07	-0.07	0.15	-0.04	0.12	-	0.38**	-0.12	0.12
9. Contempt	-0.29*	-0.16	-0.17	-0.14	0.14	-0.10	-0.34**	0.14	-	0.05	-0.09
10. Negative Coparenting	-0.22	-0.07	-0.21	0.11	0.23	0.07	0.01	0.28*	0.13	-	0.53***
11. Positive Coparenting	0.25*	0.01	0.25	< 0.01	-0.39**	-0.13	-0.11	-0.40**	-0.22	-0.72***	-

Note. Correlations between mothers' variables are presented below the diagonal, and father correlations above the diagonal.

^a means that the value is smaller than 0.01, but not below zero.

*indicates $p < .05$; **indicates $p < .01$; ***indicates $p < .001$

Supplemental Table S5*Results of the PCA of the Verbal Emotional Behavior Variables*

Variables	Contribution	Coordinates
Interest	21.19	0.67
Validation	18.87	0.63
Emotional disclosure	5.03	0.33
Constructive criticism	0.17	0.06
Criticism	7.34	-0.40
Defensiveness	4.44	-0.31
Domineering	15.24	-0.57
Speech interruption	8.71	-0.43
Contempt	19.01	-0.64

Note. Boldface values represent the variables contributions' that exceed the average contribution (i.e., 11.11%)

Supplemental Table S6*Frequencies of the Verbal Emotional Behavior and Poisson Generalized Linear Models Results*

	Time comparisons										Gender comparisons					
	Mothers					Fathers					Gender			Gender x Time		
Emotional Behavior	Pre	Post	β	p	p_H	Pre	Post	β	p	p_H	β	p	p_H	β	p	p_H
Positive																
1. Interest/curiosity	248	237	-0.05	.611	1	317	303	-0.05	.568	1	0.25	.003	.241	0	.999	1
2. Validation	132	146	0.10	.401	1	173	182	0.05	.627	1	0.27	.018	.106	-0.05	.751	1
3. Affect/caring	0	1	-	-	-	0	0	-	-	-	-	-	-	-	-	-
4. Emotional disclosure	62	78	0.23	.177	1	48	43	-0.11	.600	1	-0.26	.183	.732	-0.34	.209	1
5. Constructive criticism	70	70	0	1	1	61	41	-0.40	.049	.392	0	.432	.936	0	.131	.917
Negative																
6. Criticism	105	94	-0.11	.436	1	76	64	-0.17	.311	1	-0.32	.028	.139	-0.06	.777	1
7. Defensiveness	82	76	-0.08	.633	1	158	129	-0.20	.088	.616	0.66	<.001	<.001	-0.13	<.001	<.001
8. Domineering	205	138	-0.40	<.001	.003	20	43	0.77	.005	.045	-2.33	<.001	<.001	1.16	<.001	<.001
9. Stonewalling	0	1	-	-	-	0	0	-	-	-	-	-	-	-	-	-
10. Speech interruption	20	19	-0.05	.873	1	16	19	0.17	.613	1	-0.22	.506	.936	0.22	.632	1
11. Contempt	44	39	-0.12	.583	1	35	39	0.11	.642	1	-0.22	.312	.936	0.22	.475	1
12. Belligerence	7	3	-0.85	-	-	1	2	-	-	-	-	-	-	-	-	-

Note. p_H = Holm corrected p-value. Boldface values show the significant p-values after Holm's correction. Codes 3 (affect/caring), 9

(stonewalling) and 12 (belligerence) were removed from the analyses because we did not have sufficient data.

The study described in this chapter explored observed couple interactions in a disagreement conversation task on a topic related to the coparenting relationship (e.g., childrearing, or screen time of the child) and self-reports of positive and negative coparenting pre- and post-therapy, in a sample of 64 mixed-sex parental couples. Principal component analysis was used to reduce the dimensionality of the observational data obtained with the coding of the couple interactions and multilevel modeling analyses were performed to explore the change in the self-reports and interactions. Overall, the results suggested a positive change in the couples' self-reports of coparenting and in their interactions. For instance, both partners reported more positive coparenting following therapy, and results from the observed interactions suggested that mothers became more willing to give fathers space in the conversations and that fathers became more assertive or involved on the coparenting topics. These results suggest that addressing the coparental relationship and the couple interactions in couple therapy can benefit parental couples, which may be particularly relevant if the couple is at risk for separation.

In the next chapter I will turn my attention to couple interactions of same-gender couples. This original dataset was drawn from a pilot study on a couple relationship education program specifically designed for sexual minority individuals (i.e., those who identify as lesbian, gay, or bisexual), a population that has been overlooked in research on relationship interventions. During the program, couples were taught how to efficiently communicate in times of stress by applying a specific conversation exercise (i.e., the 3-phase method). Therefore, the aim of the study will be to analyze the couple interactions during the 3-phase method to investigate the couples' fidelity to the taught exercise.

Chapter 4. Behavioral Coding of Communication Dynamics in Same-Gender Couples' Support Conversations

This chapter is based on Liekmeier, E., Randall, A. K., Calveri, E. G., Totenhagen, C. J., Darwiche, J., and Bodenmann, G. (2023) Behavioral Coding of Communication Dynamics in Same-Gender Couples' Support Conversations [Manuscript under revision]. Institute of Psychology, University of Lausanne.

Abstract

Romantic partners' stress communication and provision of partner support are important for relationship functioning. The Couples Coping Enhancement Training – Sexual Minority Stress (CCET-SMS) is a five-module relationship education program designed to teach sexual minority couples how to communicate and provide support to one another during times of distress using the 3-phase method. The 3-phase method has been found effective in decreasing perceptions of stress and ultimately increasing relationship satisfaction; however, such results have relied on partners' self-report following the task. As such, little is known about how couples' communication dynamics unfold in real time. This study sheds light on partners' communication during the 3-phase method by applying conversation analysis with a dynamic dyadic systems perspective using data from eight couples who were participating in the CCET-SMS program. During the program, couples carried out the 3-phase method while discussing an area of stress within their relationship. Their conversations were transcribed and coded to analyze partners' turn-taking behaviors. Results indicated a strong alignment between the identified turn types in each phase and the overall procedure of the 3-phase method. Additionally, the couples' conversation patterns showed an overall alignment with the roles and instructions of the 3-phase method. The findings offer a detailed analysis of the couples' conversations, providing valuable insights into the fidelity of the 3-phase method, complementing those obtained through questionnaires in previous studies.

Introduction

Stressful experiences are a part of daily life, and can originate from diverse areas such as work, family, and personal obligations. Feelings associated with stressful events can cross-over from one partner to another due to partners' shared interdependence (Bodenmann, 2005; Totenhagen et al., 2012). Consequently, if partners are unable to communicate effectively and manage their stress, it can negatively impact the quality of their relationship (Randall & Bodenmann, 2017).

Bodenmann's (1995) stress–divorce model explains the chain of events that can occur from the presence of stress (for one or both partners) to the impact on the couple's interactions, and ultimately to the deterioration of the relationship quality. The model explains that in the absence of support for chronic stressors, the partners may experience decreased effective communication and time together, and as such, their interactions may be less positive and more negative, which can strain the relationship, create a distance between the partners and lead to a lack of emotional connection and intimacy, thus lessening the feeling of togetherness (Bodenmann, 2005). Thus, how stress is communicated and dealt with within the relationship is important for relationship satisfaction and stability (for further information on the systemic-transactional model of dyadic coping, see (Bodenmann et al., 2016).

To help couples learn about how to communicate their stress and receive support, Bodenmann and Shantinath (2004) developed the Couples Coping Enhancement Training (CCET). Based on the systemic transactional model of dyadic coping (Bodenmann, 2005), the original German version of the CCET is an empirically validated relationship education program that teaches partners about various stressors they might face, specifically stress that originates outside the relationship that can have deleterious effects on their relationship functioning, and ways to enhance communication about stress and develop coping skills

together for better outcomes (Bodenmann & Shantinath, 2004). The CCET program consists of five modules, varying in length from 1.5 to 5 hours, typically delivered in a one-weekend long workshop (Johnson-Fait et al., 2018). Trained facilitators lead couples through the modules. Trained facilitators guide couples through modules that combine psychoeducation (theoretical explanations, self-reflection, coached communication, and homework) with practical exercises tailored to their unique relationship. The CCET methods include presenting material, instructor demonstrations, diagnostic exercises, group discussions, role plays, and homework (Johnson-Fait et al., 2018).

Despite all couples experiencing stress, some individuals and couples may be predisposed to experience additional stressors due to their identity factors. For example, sexual minority individuals (i.e., those who identify as lesbian, gay, or bisexual) may experience minority stress or stress associated with their marginalized identity living in heteronormative societies (Meyer, 2003). Therefore, it is important that relationship education (and clinical interventions) are culturally sensitive to the populations in which they are designed to serve (Scott et al., 2019). Same-gender couples, in particular, report facing barriers to participating in programs that are not specifically tailored to them, often citing concerns about relevance and heterosexist bias (Scott & Rhoades, 2014). Along these lines, while the CCET has been found efficacious with different-gender (heterosexual) couples in several randomized clinical trials (e.g., Bodenmann et al., 2014; Ledermann et al., 2007; Zemp, Merz, et al., 2017), this program does not focus on sexual minority stressors and is not culturally sensitive for use with same-gender couples. To help close disparities in psychological and relational health for sexual minorities, Randall, Totenhagen, and Bodenmann (2022) revised the CCET program to create the Couples Coping Enhancement Training – Sexual Minority Stress (CCET-SMS) program. The CCET-SMS is innovative as no other relationship education program focuses explicitly on teaching same-gender couples

about sources of sexual minority stress, their impacts on individual and relational well-being, while allowing couples to learn and practice stress communication and how to cope together (i.e., engaging in dyadic coping) with a trained facilitator.

A central element to both the CCET and CCET-SMS program is the *3-phase method*, wherein couples learn to effectively communicate stress, receive support, and provide feedback to their partner regarding a situation that is causing distress. Specifically, in phase 1 one partner is the speaker and shares their stress and the listener is invited to summarize and restate what the speaker said. In phase 2, the partners switch roles, and the former listener becomes speaker and provides support, and the former speaker is listening to their partner. In phase 3, the partners switch roles again, the partner that shared the stress becomes speaker and gives feedback to the listening partner about the support they gave in phase 2. The conversation lasts approximately 35 minutes (20 mins for phase 1, 10 mins for phase 2, and 5 mins for phase 3) for each partner (70 minutes per couple). For a more detailed description of the method and a case example see Bodenmann and Milek (2016).

Several longitudinal studies have supported the effectiveness of the 3-phase method in enhancing communication and coping skills among couples (e.g., Bodenmann & Shantinath, 2004; Ledermann et al., 2007). For example, Bodenmann and Shantinath (2004) assessed couples' communication by collecting observational data on a conflict discussion. Results from this study found that couples applying the 3-phase method experienced significant improvements in communication (i.e., more positive and less negative communication) after the intervention compared to baseline. Additionally, Ledermann et al. (2007) investigated couples' communication before and after the CCET program with self-reports and found that couples applying the 3-phase method reported less negative communication and more positive communication at posttest compared to baseline. Despite the effectiveness and the fidelity of the 3-phase method, it has only been examined with

aggregate or retrospective self-reports; thus, little is known about *how* couples communicate their stress in real time during the 3-phase method. Having such data is important to understand how conversations unfold dynamically, between partners, rather than just examining static snapshots of each partner's perception of specific points of the conversation (i.e., "How did you feel when your partner said X?") or the totality of the conversation (i.e., "Did you feel supported by your partner during this interaction?").

To accurately investigate partners' communication dynamics (i.e., *how* they communicate with each other), it is important to consider the interdependence and non-linearity of partner's data (Brinberg & Lydon-Staley, 2023). Advances in mathematical modeling provide new methods to studying real-time conversational data (Brinberg & Lydon-Staley, 2023). The Dynamic Dyadic Systems (DDS) perspective acknowledges the inherent complexity and variability of human communication, enabling a more nuanced and detailed exploration of how conversations evolve over time (Solomon et al., 2023). Applying a DDS perspective to investigate how same-gender couples' conversations unfold during the 3-phase method will aid in both understanding a) the fidelity of the 3-phase method and b) perhaps more importantly, discussions of same-gender couples discussing stress in the context of their relationship, which is an understudied area in the literature (for a review see Randall et al., 2023).

Present Study

Applying a DDS perspective, the goal of the present study is to examine the conversation dynamics among same-gender couples during the 3-phase method of the CCET-SMS. The DDS perspective allows for the use of a deductive approach, wherein no *a priori* hypotheses are made about the data collected. Thus, the turn-taking behaviors during partners' conversations contain unique conversational patterns, which evolve over the context of the conversation (Gandhi et al., 2023).

This study will apply the Supportive Conversation Assessment Rubric (SCAR: Bodie et al., 2021) to identify predominant turn types in each phase of the conversations. The SCAR is a method based on Stiles' (1992) Verbal Response Mode typology, which is a widely used taxonomy of speech utterances defined in terms of their interpersonal function. For the purpose of our study, discloser is defined as the partner sharing their stress (phase 1), receiving support (phase 2) and then providing feedback (phase 3), whereas the listener is defined as the partner listening (phase 1), providing support (phase 2), and then receiving feedback (phase 3). We use video-recorded conversational data to look at form and intent of the utterances both for discloser and listener (for more details, refer to the Method section) In sum, the following research questions (RQs) will be explored:

RQ1a: What are the turn types for disclosers across the 3 phases?

RQ1b: What are the turn types for the listeners across the 3 phases?

RQ2a: What is the turn type pattern for each couple?

RQ2b: Does the turn types pattern align with the roles and instructions in the 3-phase method?

Method

Positionality Statements

The first author identifies as a German and Swiss, White, cisgender female adult who is married to a man. She is currently finishing her PhD in Psychology at a large public University in Switzerland. The second author identifies as a Greek, White, cisgender female, lesbian adult. She holds a PhD in Family Studies and Human Development, is an Associate Professor at a large public university in the Southwest portion of the United States and is a trained facilitator of the CCET and CCET-SMS programs. The third author identifies as a White, cisgender female, bisexual adult. She is currently pursuing her masters in counseling and served as the Project Coordinator and trained facilitator of the CCET-SMS program.

The fourth author identifies as a White, cisgender female adult who is married to a man. She earned a PhD in Family Studies and Human Development and now works as an Associate Professor at a large public university in the Southeast portion of the United States. The fifth author identifies as a White, cisgender female, heterosexual adult. She holds a PhD in Clinical Psychology, is an Associate Professor of Family and Couple Psychology at a large public University in Switzerland and is a trained couple and family psychotherapist. The sixth author identifies as a Swiss, White, cisgender male, heterosexual married adult. He holds a PhD in Clinical Psychology, is a Full Professor in Clinical Psychology at a large public University in Switzerland and is the developer of the CCET program.

Recruitment and Participants

Data for this study comes from a larger project examining the initial feasibility, acceptability, and efficacy of the CCET-SMS program (STUDY# 00013636). Participants were recruited in the metropolitan area of a large Southwestern city in the United States between September 2022 and August 2023. Participants were recruited using various methods such as posting the recruitment flyer to LGBTQ+ community groups, LGBTQ+ organizations associated with university staff, faculty, and students, local online groups, and snowball sampling. Participants were required to meet the following criteria to be participate: 1) be at least 18 years old, 2) residing in the metropolitan area of the city in which they were recruited, 3) being in a same-gender relationship for a minimum of 6 months, 4) not actively seeking mental health services (including individual or couples therapy), and 5) both partners willing to take part in the study.

The sample is composed of eight couples ($N = 16$ individuals). The mean age of the participants was 31.65 years ($SD = 16.62$; range 19–75 years). The highest level of education obtained by the participants was a graduate degree ($n = 3$, 18.8%), six participants had an undergraduate degree (37.5%), five participants had some college (31.3%), and two

participants had a high school degree (12.5%). The mean yearly income per individual was between \$25,000 and \$49,000 USD. Only one couple reported having a 15-year-old child. Gender identity, sexual orientation, relationship status, cohabitation status, and relationship length are presented in Table 1.

Table 1*Sociodemographic Characteristics of Participants*

	<i>n</i>	%
Gender Identity		
Cisgender woman	12	75.0
Cisgender man	3	18.8
Genderqueer	1	6.3
Transgender man	1	6.3
Sexual Orientation		
Asexual	1	6.3
Bisexual	6	37.5
Gay	4	25.0
Lesbian	6	37.5
Queer	1	6.3
Relationship Status		
Seriously Dating	4	25.0
Lifelong commitment	6	37.5
Not reported	6	35.5
Cohabiting		
Yes	10	62.5
No	6	37.5
	<i>M</i>	<i>SD</i>
Relationship Length (years)	4.23	3.32

Facilitators

The CCET-SMS program was delivered by three trained facilitators, who were trained by the second author over a 3-day period. During the training, the facilitators learned about the content and delivery of the program and practiced the application of the 3-phase method. The third author was one of the facilitators and their positionality is stated above.

The second facilitator identifies as a White, bisexual, cisgender woman. She holds a masters in counseling and works as an adult family therapist, delivering therapeutic services to both individuals and couples. The third facilitator identifies as a Black, nonbinary, lesbian, and holds a master's degree in counseling.

Procedure

The Institutional Review Board at the Arizona State University approved the study and its procedures. Those interested in participating were instructed to contact the Project Coordinator via email to express their interest and initiate the screening process. Once both partners expressed interest in participating, both partners were sent a Qualtrics survey link wherein they first completed the informed consent and then screening survey. Eligible participants were automatically directed to the baseline survey, which contained demographic questions and the study measures. After both partners completed the baseline survey, couples were scheduled to attend the 2-day CCET-SMS workshop held at the Arizona State University.

The CCET-SMS workshop took place on a Saturday and Sunday from 10 a.m. to 5 p.m., with a one-hour lunch break. The psychoeducation components of the workshop were delivered in a conference room. Participants were escorted to a private room equipped with video recording technology perform the 3-phase method for the first time. Following completion of the CCET-SMS workshop, participants received a follow-up survey via Qualtrics that asked participants on aspects of individual and relational well-being. Participation in the entire study lasted approximately 14 hours. Each participant received \$225 (\$450 per dyad) for completion of the study³.

³ The compensation breakdown included: (1) \$200 for completing the baseline survey and attending the two-day workshop (2) \$5 for completing the follow-up survey, and (3) a \$20 bonus for completing the baseline, workshop, and follow-up surveys.

3-Phase Method

Data for this study comes from Module 3 of the CCET-SMS wherein partners were instructed to practice the 3-phase method while discussing an area of stress within their relationship. Both partners completed this exercise, yet partners determined who would go first. Prior to this, they had completed an exercise in Module 2, where they learned the speaker and listener rules and practiced sharing about an external stressor through stress-related emotional self-disclosure. As described in the Introduction, the 3-phase method entailed that the discloser first related their stress to their partner (phase 1, 20 minutes), then the listener was advised to provide support (phase 2, 10 minutes), and finally the discloser gave feedback to their partner regarding their support (e.g., how helpful it was, or what they would have wished differently; phase 3, 5 minutes).

Measures

Supportive Conversation Assessment Rubric (SCAR; Bodie et al., 2021)

Each video-recorded stress conversation was transcribed and then coded for form and intent at the independent clause level using the SCAR. The SCAR is based on the verbal response mode taxonomy by Stiles (1992). Each clause was assigned one of the following categories for form and intent: *disclosure* (communicating thoughts or feelings), *edification* (expressing objective information), *confirmation* (comparing one's experience with partner's), *acknowledgement* (disclose receptiveness to other's communication), *interpretation* (describing or labeling partner), *reflection* (putting partner's experience into words), *question* (asking information) and *advisement* (suggestions to guide behavior). Inaudible speech and fillers (e.g., "you know", "I mean") were coded in a ninth category entitled "uncodable".

Couples' transcribed conversations were coded by the first and third authors trained on this method. The coders unitized and coded two dyads from a training data set and met

with the trainer to review the coding. Then, the coders independently coded the conversations from this study's sample for form and intent. The first and third author had good interrater reliability (Krippendorff's alpha ranged from .61 to .83) and met to discuss their discrepancy to agree on the final codes to use for data analysis.

Data Analysis

All analyses on the coding data were performed in R (R Core Team, 2022) using the openly accessible syntax and resources provided by LHAMA (Longitudinal Human Analytics Made Accessible; Brinberg et al., 2021). First, we pooled the utterance time-series data into speaking turns for each partner. Each speaking turn was represented by a vector summarizing the percentage composition of the 9 form and 9 intent codes (i.e., 18 codes) for the utterances⁴. Second, we transformed each conversation into categorical sequences of turn types, therefore we used cluster analysis with the *cluster* package (Maechler et al., 2022) to identify predominant turn types for each phase (i.e., phase 1: stress disclosure, phase 2: support, and phase 3: feedback) and each partner's role (i.e., discloser and listener). Finally, we plotted the turn type sequences for each couple using the *ggplot2* package (Wickham, 2016) to identify the conversational pattern throughout the 3-phases.

Results

RQ1a and 1b: Turn Types for Disclosers and Listeners across the 3 Phases

The dataset included approximately 560 minutes of conversation, thus in total there were 1,372 data points (i.e., speaking turns) for disclosers and listeners⁵. Hierarchical clustering was used in each phase of the conversations (i.e., stress disclosure, support, and feedback) to identify the turn types for each partners' role (i.e., discloser or listener). Table

⁴ The number of utterances and speaking turns varied for each partner according to how much they spoke.

⁵ Facilitator utterances and speaking turns were excluded from the analyses given the focus of the study on partners' conversational dynamics.

2 shows the chosen conversation topics, the number of utterances, and the number of speaking turns for each couple.

Phase 1

For the discloser, cluster analysis showed one turn type, *disclosure*. *Disclosure* codes reflect that the discloser is sharing their own thoughts, perceptions, feelings, or intentions by making “I” statements. For the listener, three turn types were identified: *question*, *acknowledgement*, and *reflection*. *Question* utterances are characterized by interrogative sentences that request information or guidance. *Acknowledgement* utterances convey receptiveness to the other’s communication. *Reflection* utterances are characterized by statements that put the other’s experience into words, restate the other’s words or clarify them.

Phase 2

For the listener, cluster analysis identified two turn types, *disclosure*, and *acknowledgement*. For the discloser, the same two turn types were identified: *disclosure* and *acknowledgement*.

Phase 3

For the discloser, cluster analysis showed two turn types, *disclosure*, and *acknowledgement-confirmation*. The latter were turns in which *acknowledgement* utterances were interspersed with *confirmation* utterances (i.e., statements in which the person is agreeing or disagreeing with the other or comparing their own experience with the other’s). For the listener, the analyses identified four turn types, *acknowledgement*, *disclosure*, *question*, and *edification-confirmation*. The latter are turn types in which *confirmation* utterances are in between *edification* utterances (i.e., statements in which the person is stating objective information).

Table 2
Conversation Topics, Number of Units and Speaking Turns per Couple

Couple	Stress	Conversation Topic	Phase	Units	Speaking Turns ^a
1	Partner A	Feels left out of the conversation and insecure when with her partner and her sister-in-law.	1	138	32
			2	31	7
			3	27	6
	Partner B	Difficult for her to tell “no” to her partner, does not feel respected by her partner when she says “no”.	1	169	45
			2	55	2
			3	29	5
2	Partner A	Feels jealous of the partner’s dates (polyamorous), fears that the partner will leave him.	1	252	59
			2	69	8
			3	21	1
	Partner B	Worried about introducing his partner to his other relationships, afraid that they bond and then the other relationship ends poorly.	1	315	48
			2	38	3
			3	15	1
3	Partner A	Does not feel listened to when she talks to her partner about her family.	1	342	83
			2	127	1
			3	34	7
	Partner B	Is stressed when her partner shares sensitive topics (e.g., the mother’s alcoholism) in public.	1	581	85
			2	65	14
			3	80	16
4	Partner A	Values cleaning and tidying more than her partner, gets stressed when there is a mess at home.	1	312	46
			2	108	27
			3	33	5
	Partner B	Feels frustrated and sometimes obliged to do things with the in-laws, even if it’s last minute.	1	545	123
			2	46	3
			3	36	5
5	Partner A	Does not feel validated when she cooks, and her partner does not come to eat on time.	1	258	39
			2	204	64
			3	51	15
	Partner B	Feels like she has to be the driver in the family and is bothered by the partner’s comments about her driving.	1	266	19
			2	52	18
			3	35	5
6	Partner A	Does not feel heard, has to repeat herself and also not getting the point across about what she is feeling.	1	254	51
			2	91	8
			3	77	8
	Partner B	Feels like there are situations in the relationship that are given up on quickly or walked away from. Feels pushed aside and belittled.	1	202	35
			2	108	7
			3	52	6
7	Partner A	Feels stressed for the relationship’s future, they cannot plan for the next six months.	1	338	137
			2	82	26
			3	24	5
	Partner B	Does not feel listened to or acknowledged when talking about their in-laws. He would like to openly talk about what the in-laws say or do.	1	289	71
			2	54	4
			3	16	7
8	Partner A	Feels disrespected when she has an argument with their child because the partner jumps in and takes the child’s side.	1	367	81
			2	37	2
			3	86	25
	Partner B	Feels annoyed when she is directing something at their child, or their pet and her partner requests to know what was said.	1	327	75
			2	108	27
			3	22	5

Note. Phase 1 = Stress, Phase 2 = Support, Phase 3 = Feedback

^a The number of speaking turns is for both the discloser and listener in each phase of the conversation (e.g., Couple 1, Partner A’s stress, phase 1, there were 32 speaking turns for the discloser and listener).

Conversational Patterns and Alignment with the 3-Phase Method (RQ2a and RQ2b)

Figures 1–8 represent the turn-to-turn behaviors across the 3-phases for each couple. For each Figure, the x-axes indicate the temporal progression of the observed turn sequences, and the vertical bars on the y-axes differentiate the color-coded distinct behaviors exhibited by each partner during their respective turns. Table 3 summarizes the frequencies of each turn type for partners A and B of each couple across the 3-phases. To avoid redundancy in this section, we decided to group the patterns into two broad categories: (1) patterns that aligned with the roles and instructions of the 3-phase method and (2) other patterns.

Overall, the patterns aligned with the roles and instructions of the 3-phase method. In phase 1, the stress disclosing partner used "I" statements to disclose their stress by sharing their thoughts, feelings, or intentions (*disclosure* turns), while the listening partner summarized, repeated, restated, and clarified the partner's experience (*reflection* turns), and/or asked for further details (*question* turns), and/or conveyed receptiveness to the partner's communication (*acknowledgement* turns). In phase 2, the listening partner offered support through mainly sharing their thoughts, feelings, or intentions (*disclosure* turns), while the stress disclosing partner either remained silent, or showed receptiveness to the listening partner's support (*acknowledgement* turns), and/or shared their thoughts, feelings, or intentions (*disclosure* turns). In phase 3, the stress disclosing partner provided feedback by expressing their thoughts, feelings, or intentions (*disclosure* turns), and/or acknowledged their partner's communication while expressing agreement, disagreement, or comparing experiences (*acknowledgement-confirmation* turns), while the listening partner either remained silent, or demonstrated receptiveness to their partner's communication (*acknowledgement* turns), and/or shared their own thoughts, feelings, perceptions, or intentions (*disclosure* turns), and/or provided objective information while expressing

agreement, disagreement, or making comparisons with their partner's experiences (*edification-confirmation* turns).

Figures 1–8 and Table 3 indicate that six out of the eight couples followed this overall pattern. There were two situations in which a distinct pattern could be observed, specifically in phase 2 in which the listening partner was instructed to provide support. In Couple 2, during partner A's stress disclosure, we observed that partner B (i.e., the support provider) mainly conveyed receptiveness to partner A's communication (*acknowledgement* turns) despite being instructed to provide support, whereas partner A, supposed to receive support, was the one mainly communicating thoughts, feelings, perceptions, and intentions (*disclosure* turns). In Couple 4, during partner B's stress disclosure, we found that partner A (i.e., the support provider), shared their thoughts, feelings, perceptions, or intentions (*disclosure* turn) only once and once conveyed receptiveness to partner B's communication. However, partner B, who was supposed to receive support at this point, shared their thoughts, feelings, perceptions, or intentions (*disclosure* turn).

Figure 1

Couple 1 Turn Types in the 3-Phases

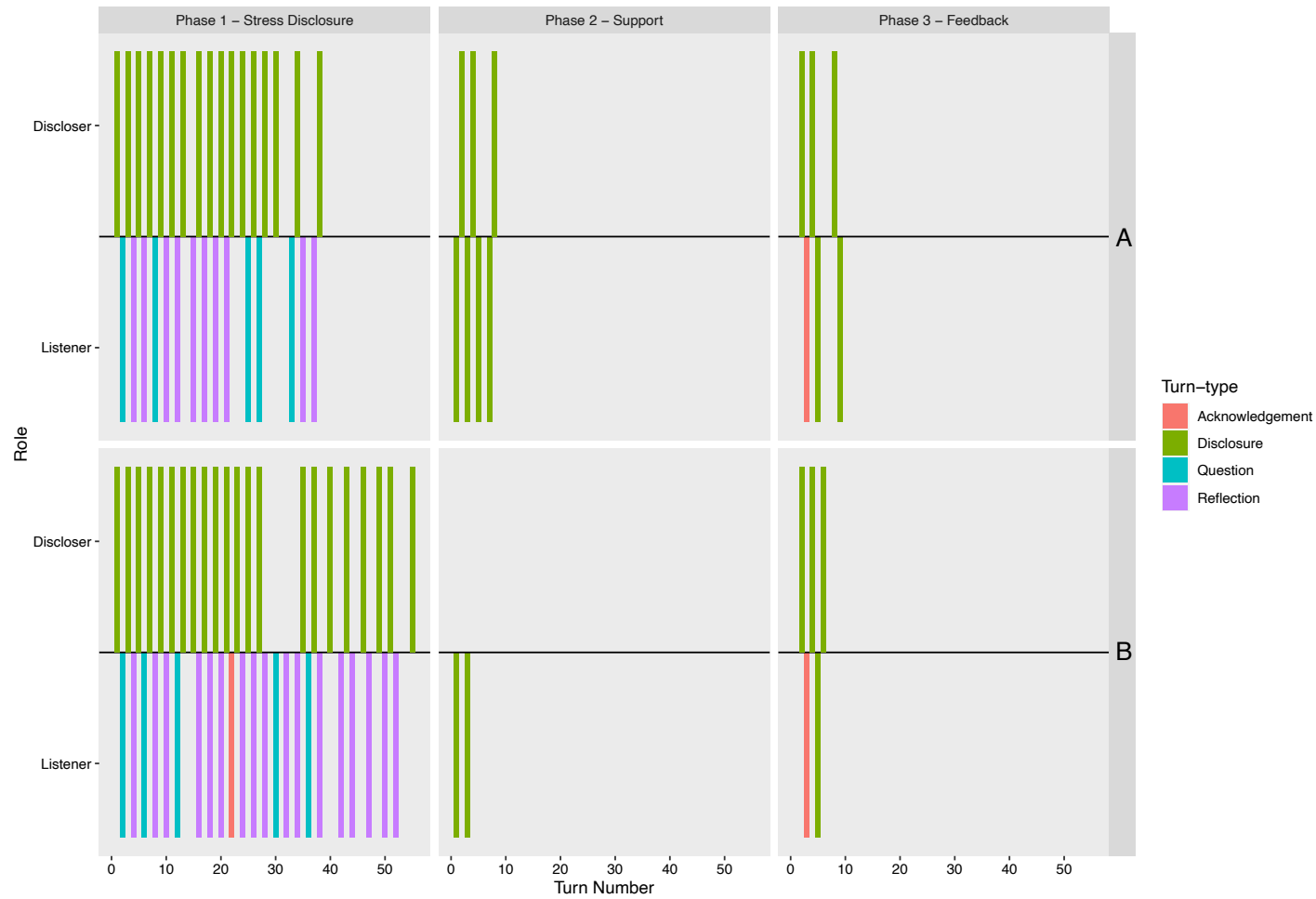


Figure 3

Couple 3 Turn Types in the 3-Phases

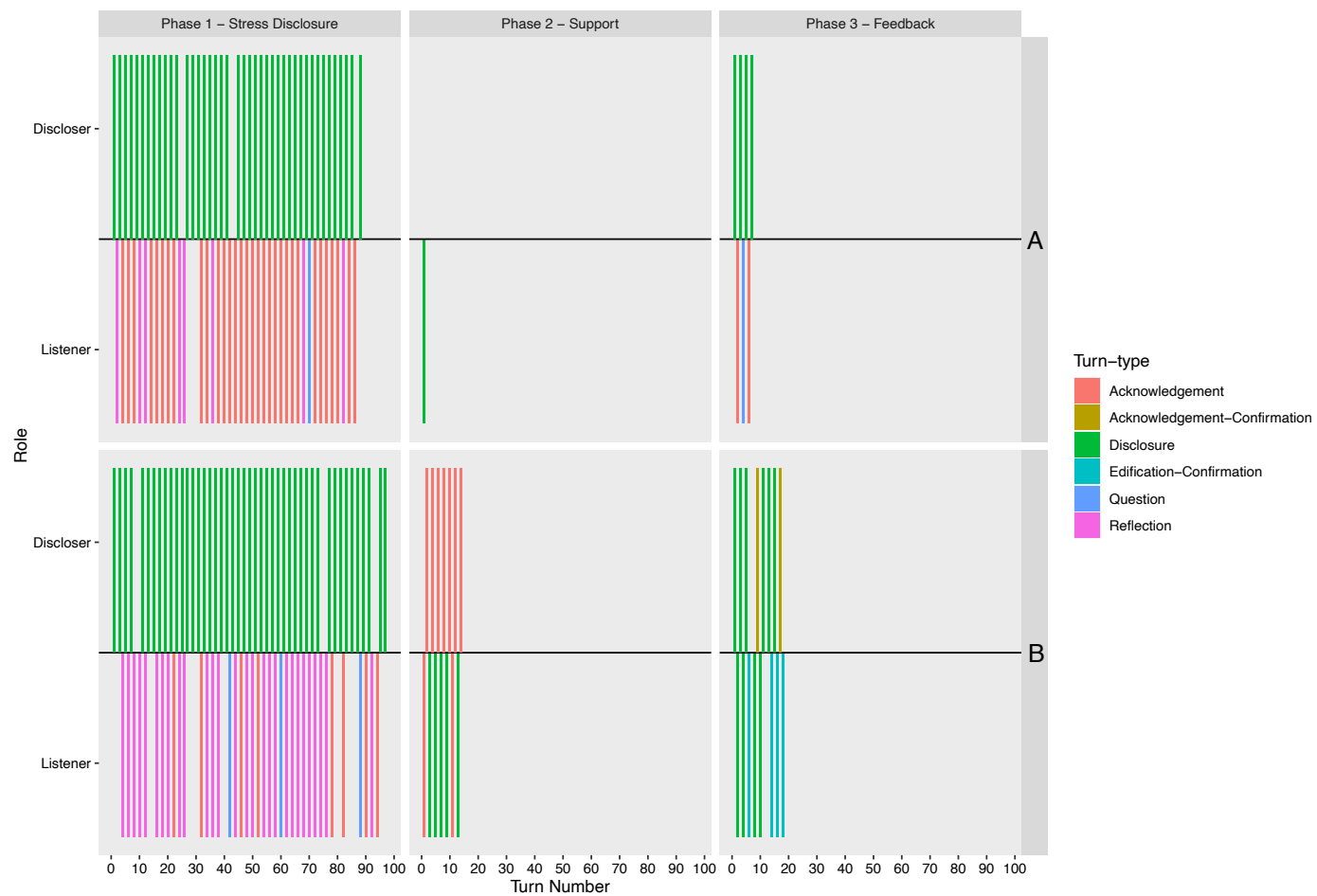


Figure 4

Couple 4 Turn Types in the 3-Phases

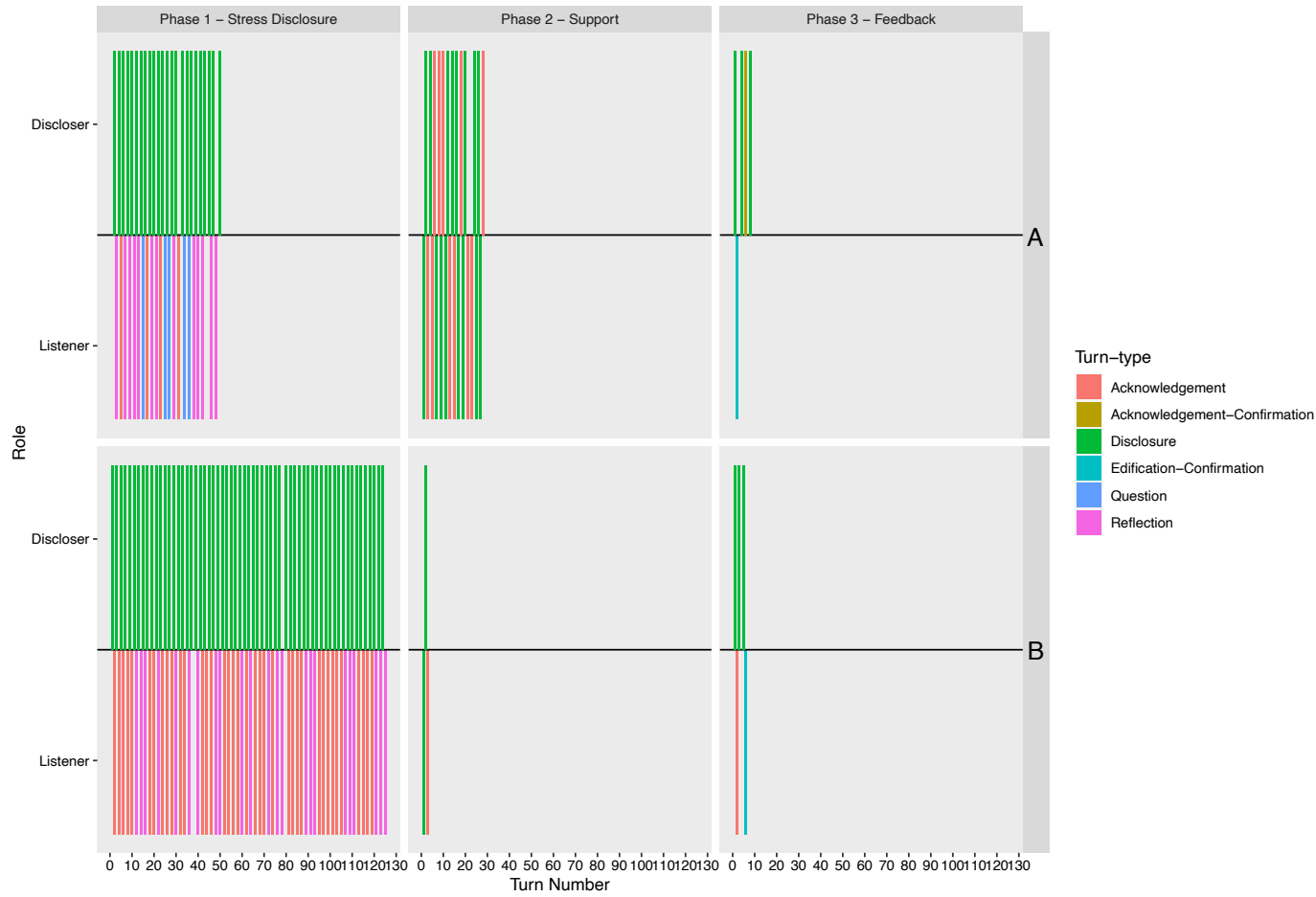


Figure 5

Couple 5 Turn Types in the 3-Phases

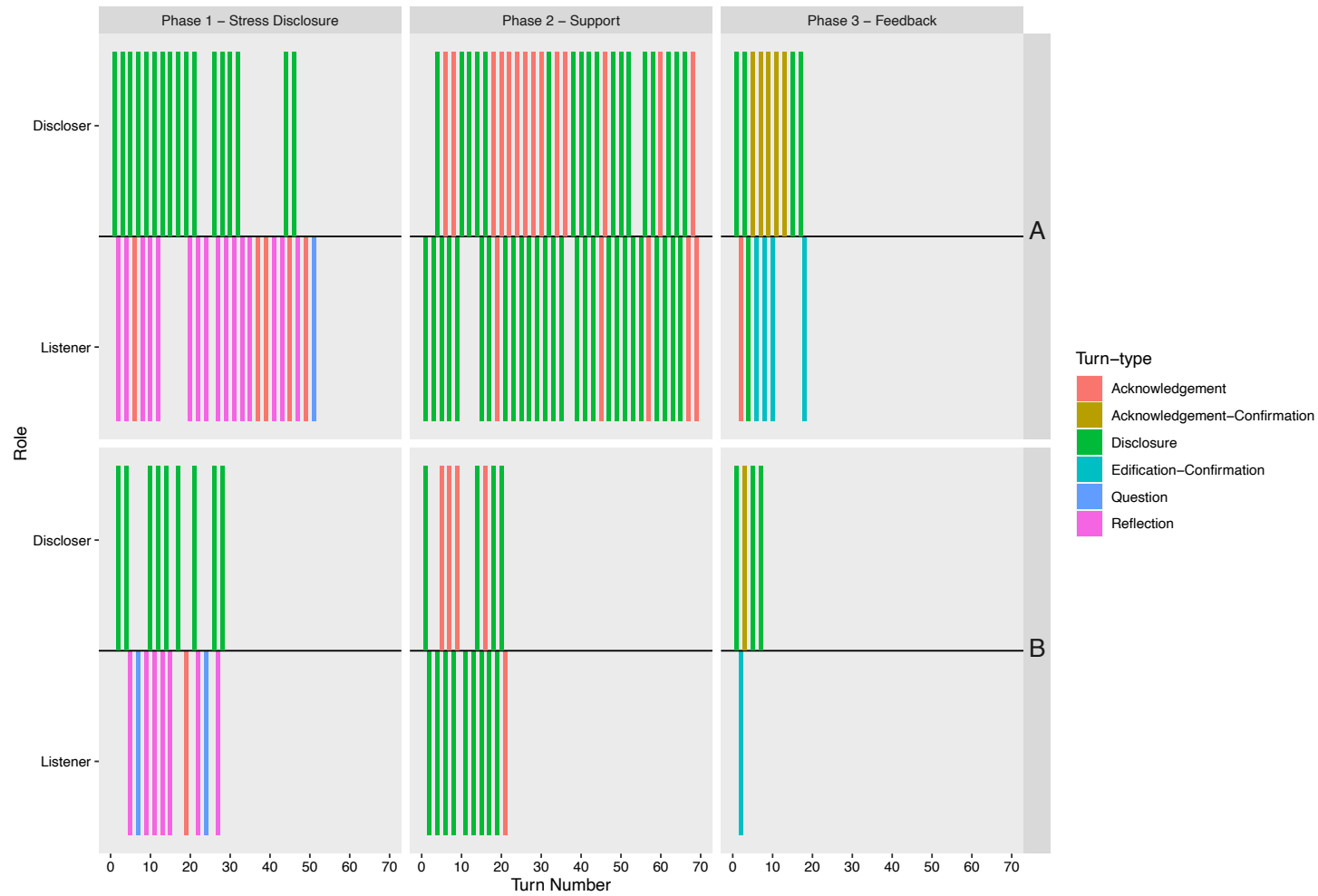


Figure 6

Couple 6 Turn Types in the 3-Phases

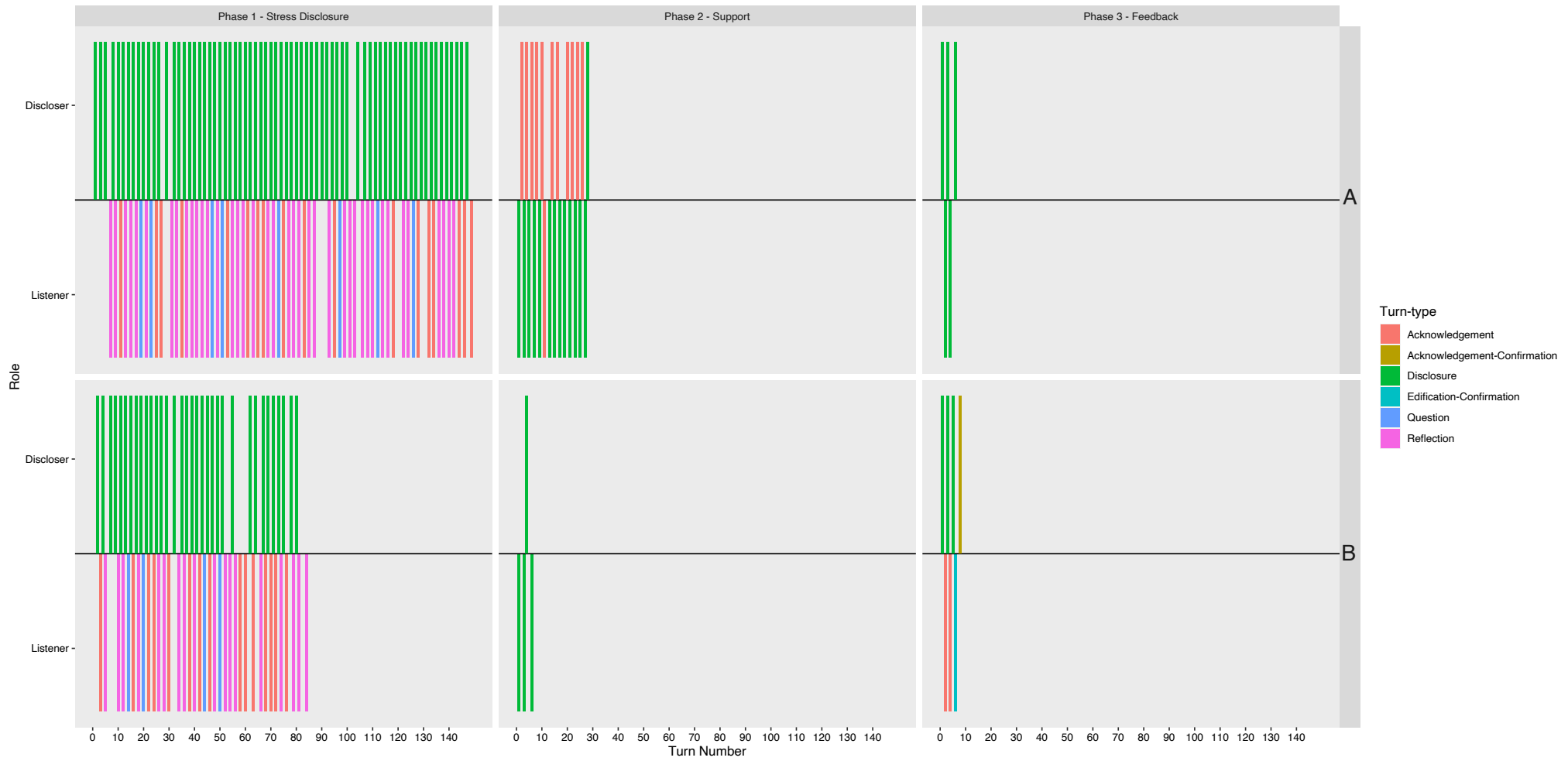


Figure 7

Couple 7 Turn Types in the 3-Phases

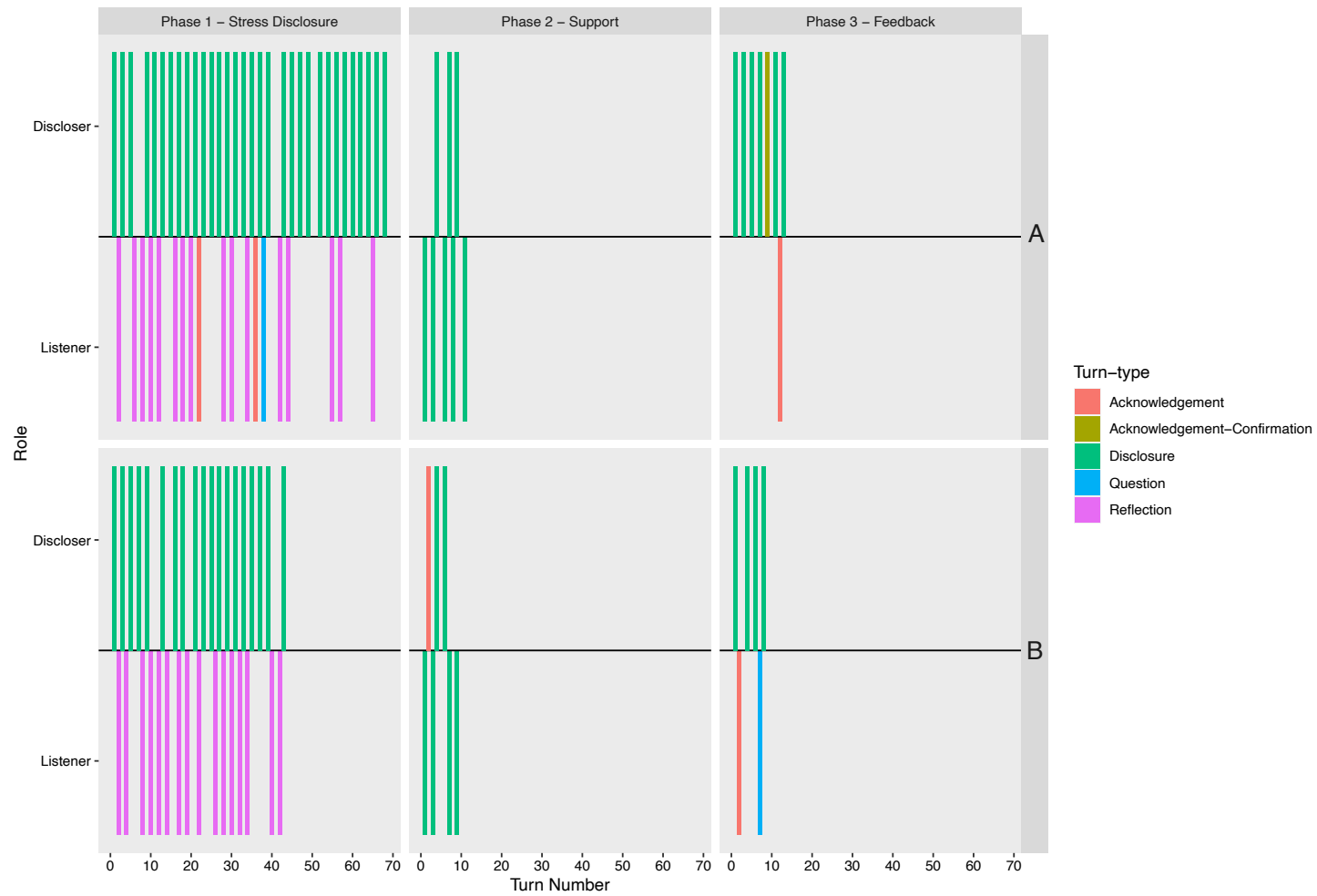


Figure 8

Couple 8 Turn Types in the 3-Phases

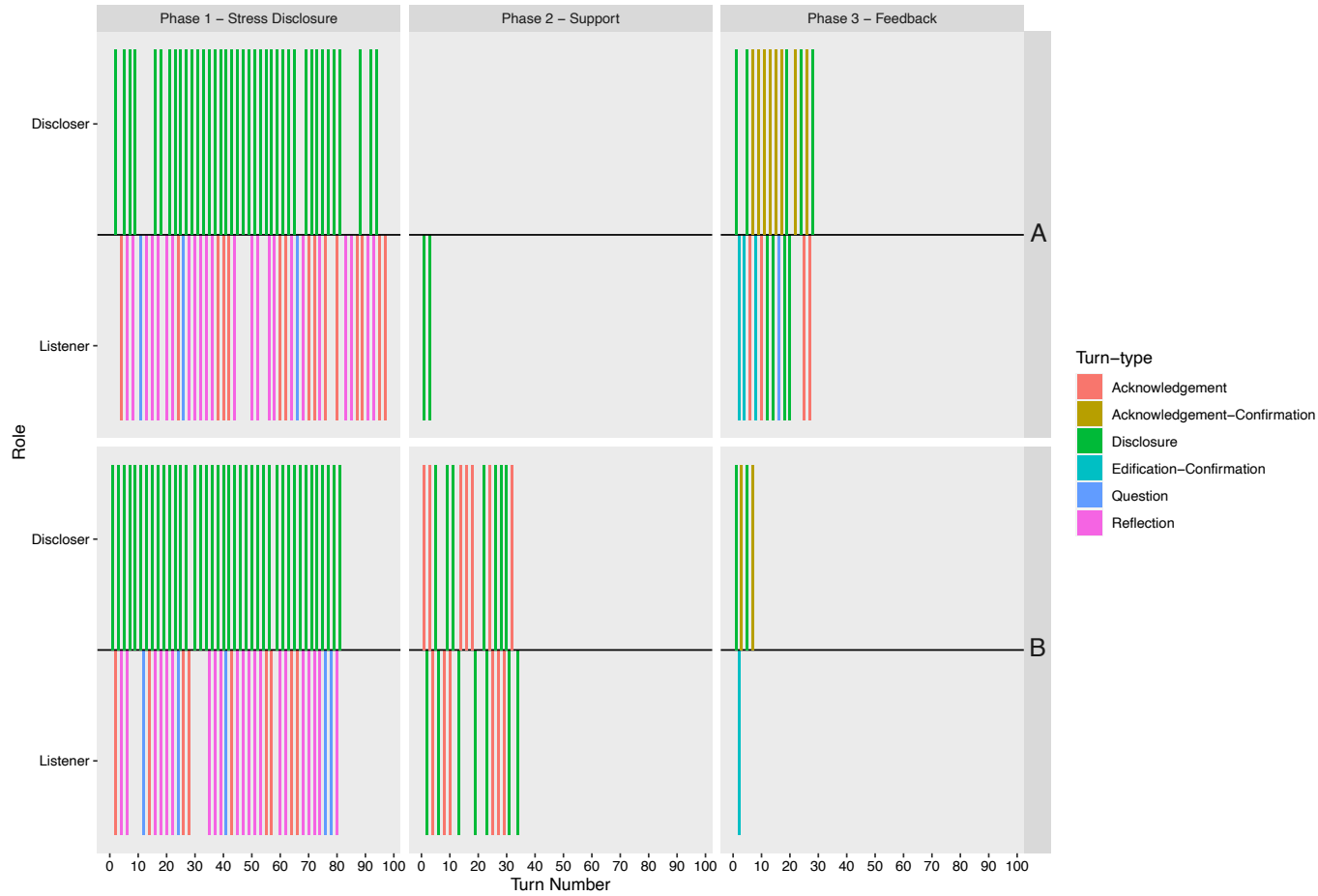


Table 3*Turn Types Frequencies in the 3-Phases for each Couple*

	Phase 1				Phase 2		Phase 3				
	D	Q	A	R	D	A	D	A-C	A	Q	E-C
Couple 1											
Partner A Discloser	17	–	–	–	3	–	3	–	–	–	–
Partner B Listener	–	5	–	10	4	–	2	–	1	–	–
Partner B Discloser	22	–	–	–	–	–	3	–	–	–	–
Partner A Listener	–	5	1	17	2	–	1	–	1	–	–
Couple 2											
Partner A Discloser	29	–	–	–	2	1	1	–	–	–	–
Partner B Listener	–	19	–	11	1	4	–	–	–	–	–
Partner B Discloser	27	–	–	–	1	–	1	–	–	–	–
Partner A Listener	–	11	–	10	2	–	–	–	–	–	–
Couple 3											
Partner A Discloser	42	–	–	–	–	–	4	–	–	–	–
Partner B Listener	–	1	32	8	1	–	–	–	2	1	–
Partner B Discloser	46	–	–	–	–	7	6	2	–	–	–
Partner A Listener	–	3	8	28	5	2	4	–	–	–	4
Couple 4											
Partner A Discloser	24	–	–	–	8	5	3	1	–	–	–
Partner B Listener	–	5	4	13	8	6	–	–	–	–	1
Partner B Discloser	62	–	–	–	1	–	3	–	–	–	–
Partner A Listener	–	–	38	23	1	1	–	–	1	–	1
Couple 5											
Partner A Discloser	17	–	–	–	18	14	4	5	–	–	–
Partner B Listener	–	1	5	16	27	5	1	–	1	–	4
Partner B Discloser	9	–	–	–	4	4	3	1	–	–	–
Partner A Listener	–	2	1	6	9	1	–	–	–	–	1
Couple 6											
Partner A Discloser	71	–	–	–	1	11	3	–	–	–	–
Partner B Listener	–	8	18	40	13	1	2	–	–	–	–
Partner B Discloser	34	–	–	–	3	–	3	1	–	–	–
Partner A Listener	–	4	15	18	1	–	–	–	2	–	1
Couple 7											
Partner A Discloser	32	–	–	–	3	–	6	1	–	–	–
Partner B Listener	–	1	2	16	5	–	–	–	1	–	–
Partner B Discloser	19	–	–	–	2	1	4	–	–	–	–
Partner A Listener	–	–	–	16	4	–	–	–	1	1	–
Couple 8											
Partner A Discloser	39	–	–	–	–	–	5	8	–	–	–
Partner B Listener	–	3	15	23	2	–	4	–	4	1	3
Partner B Discloser	40	–	–	–	7	7	2	2	–	–	–
Partner A Listener	–	5	9	21	7	6	–	–	–	–	1

Note. D = disclosure; Q = question; A = acknowledgement; R = reflection; A-C = acknowledgement-confirmation; E-C = edification-confirmation

Discussion

Couples' ability to communicate and cope with stress is beneficial to both individual and relational well-being (Randall & Bodenmann, 2017), and this may be particularly important for couples who experience additional stressors due to their marginalized identity (e.g., same-gender couples: Meyer, 2003). Despite the well-documented associations between stress communication, support provision, and well-being, to date, most of the research has examined such associations using cross-sectional data and/or aggregate reports following video-recalled conversations (e.g., Bodenmann & Shantinath, 2004; Ledermann et al., 2007). Thus, *how* partners communicate and receive support in real time has been neglected.

To address the notable gaps in the literature, this study applied a DDS approach to closely examine couples' interactions while practicing the 3-phase method as part of the CCET-SMS relationship education program. Specifically, we used transcribed conversational data from eight couple's video-recorded interactions to examine turn-by-turn time series interactional data. The goals of this study were to investigate the speaking turn types for disclosers and listeners across the three phases, and to explore the turn type pattern for each couple as well as examining whether the speaking turn types for disclosers and listeners aligned with the roles and instructions in the 3-phase method.

Overall, results shed light on the dynamics of same-gender partners' communication when communicating and receive support about an area of distress. Taking a DDS perspective, wherein partner's interactions are composed of a series of interdependent and nonlinear signals conveyed and received by each conversational partner (Solomon et al., 2023), the results show concordance in both partners' behavior and the phase shifts of the 3-phase method. Specifically, for phase 1 and 2, results

exemplified the “active listening paradigm”, which underscores the importance of responding to a discloser's speaking turn with various forms of engagement, such as acknowledgement, reflection, and open questions (Bodie et al., 2015). Moreover, partners endorsing the listener role were generally actively engaged in understanding and questioning the disclosers for further information, which reflects a commitment to comprehending and addressing the partner's stress. In phase 3, the turn type patterns were more complex, as there were combinations of turn types in which complimentary utterances are intertwined (i.e., *acknowledgement-confirmation* and *edification-confirmation*). These observed turn types hint at a conversational shift toward mutual-connectedness, which can be deduced from the fact that the partners convey a sense of shared experience and understanding what the other is going through (e.g., *acknowledgement-confirmation* turn type). Together, these findings support the rationale of the 3-phase method, which suggests that partners who possess a clear understanding of more in-depth implications of the stressful event will be able to provide better support (Bodenmann & Shantinath, 2004). Furthermore, these results align with a recent study by Feng et al. (2019), who demonstrated that the emergence of an empathic connection was facilitated between the partner sharing the stress and the partner providing support, if the support provider acknowledged, validated, allowed for elaboration, and manifested attuned listening.

Interestingly, the results demonstrated that some couples' turn types were not reflective of the instructions given for practicing the 3-phase method. For example, in the case of Couple 2, during phase 2 of partner B's stress disclosure, partner A (support provider) displayed only one *disclosure* turn and the remainder comprised of *acknowledgement* turns. This observation goes against the expected turn types at this stage of the conversation, as partner A was instructed to offer support, suggesting that

a preponderance of *disclosure* turns was anticipated in this phase. This unexpected result was also observed in Couple 4 during partner B's stress topic, as partner A had one *disclosure* turn and one *acknowledgement* turn when they were supposed to provide support. While several explanations for this finding could be provided, one possibility is that the partners had already discussed this stressor previously, with support being provided off-record, thus aligning the turns with the history of the conversation. Another explanation could be informed by Bolger et al.'s (2000) research on invisible support, which suggests that support is often more effective when it is not overtly recognized as such by the recipient. In this context, the minimalistic response patterns of the support provider might indicate a form of invisible support that avoids drawing attention to the need for assistance. Alternatively, these results could suggest the partner's inability to provide support to their partner; however, extrapolating such conclusions would warrant further examination beyond the available data

Limitations and Future Directions

Despite the valuable insights drawn from applying a DDS perspective to understanding couples' communication dynamics while participating in the CCET-SMS relationship education program, it is important to acknowledge certain limitations. First, given our data were collected as part of the CCET-SMS relationship education program, couples were instructed to have structured and facilitated conversations; thus, these dynamics may not reflect "natural" conversations occurring in daily life. Additionally, it is important to note that the facilitator's utterances and speaking turns were not accounted for, nor did we consider how the presence of the facilitator may have impacted the couples' conversation patterns. The role of the facilitator was to help partners engage in the 3-phase method; thus, their prompting might have influenced the disclosers' and listeners' responses. Another important

limitation is the absence of a pretest to determine baseline communication skills, which means we cannot be certain whether the couples were already effective communicators prior to the intervention. Third, the topic of conversations was chosen by each couple; as such, we cannot make any reliable between-dyad comparisons, especially given the small sample.

In view of these limitations and the results of our study, the following recommendations for future research are encouraged. First, collecting video-recalled conversational data from couples discussing stressors in their natural environments (e.g., at home) may provide valuable insights into how couples address stress-related topics and how they offer support in an unguided context. Second, specific to the fidelity of the 3-phase method, it would be interesting to examine how couples apply the 3-phase method on their own during a follow-up period after completing the intervention, as intended by CCET and CCET-SMS. Lastly, combining the conversational data with self-report measures taken before and after the intervention may provide valuable insights for couples and clinicians on how to effectively communicate and cope with stress within relationships.

Conclusion

By applying a dynamic dyadic systems perspective to same-gender couples' conversations during the 3-phase method of the CCET-SMS, this study advances the understanding of both couples' stress communication and coping responses as they unfold in real time and the fidelity of the 3-phase method. Communicating with one's partner during times of distress and receiving support is key to both our individual and relational wellbeing as outlined in the STM (Bodenmann et al., 2016). Results from this study highlight the importance of exploration of the stress (e.g., by restating the partner's words or clarifying them) and supportive communication (e.g., by

acknowledging the partner's experience and sharing understanding) as prominent components in navigating stress within relationships.

Chapter 5. General Discussion

The overall aim of this dissertation was to investigate couple interactions using observational methods; therefore, I conducted three separate studies. Traditionally, most research on couple relationships focused on assessing relationship satisfaction as the primary variable through self-report questionnaires (Perlman & Duck, 2006). However, given the strong link between couple interactions and relationship functioning (M. D. Johnson et al., 2022), this dissertation primarily focused on examining couple interactions using observational methods. This alternative and complementary approach, allowed for a more detailed analysis of interactions at the couple level, moving beyond individual perceptions commonly captured through self-reports (Bradbury & Karney, 2019). By directly observing couple interactions, it is possible to capture the natural interplay between partners, providing deeper insights into relationship dynamics (Charania & Ickes, 2006).

Most observational research on couple interactions has focused on populations not involved in relationship interventions. However, applying these methods to couples undergoing relationship interventions is crucial, as it offers a deeper understanding of the unique dynamics and challenges faced by those experiencing significant relationship distress. Observational methods in this context provide researchers with a comprehensive view of couple dynamics, enabling the identification of problematic patterns, monitoring of progress, and assessment of intervention effectiveness (Wampler & Harper, 2014). This approach is essential for developing more effective interventions and treatments. Accordingly, in this dissertation, I examined couple interactions within the context of two relationship interventions: a

randomized controlled trial assessing couple therapy for parents and a pilot study exploring a relationship education program for same-gender couples.

Moreover, over the past four decades, research on relationship interventions predominantly centered on married heterosexual couples (Finkel et al., 2017; Proulx et al., 2017). However, findings from studies on these couples may not generalize to other relationship types (Williamson et al., 2022), which is why my studies focused on two understudied populations in the context of relationship interventions: parent couples and same-gender couples. While parent couples were often included as part of broader studies, they were rarely examined independently. In contrast, same-gender couples were frequently overlooked altogether. Focusing on these populations allowed for a deeper understanding of couple dynamics within these groups, ultimately enhancing the applicability of relationship interventions to these populations.

In this final chapter, I will begin by discussing the findings from my three studies and their contributions to the broader literature. Next, I will highlight the significance of these results. I will then address the limitations of my research and suggest ways to mitigate them. Following this, I will explore potential future directions and new opportunities for observing couple interactions, particularly with the emergence of new technologies like AI. Finally, I will conclude by summarizing the key points and offering an outlook for future research.

Contributions to the Literature

In this section, I will provide a synthesis of each study's broader contribution to the literature. As Chapters 2 and 3 cover a common research project, I have decided to group their contributions, while contributions from Chapter 4 will be discussed separately.

Chapters 2 and 3

Results from the studies in Chapters 2 and 3 expand our knowledge of couple interactions and the coparenting relationship in couple therapy and contribute to the literature in several ways.

First, the findings highlight the significant value of using observational methods to study couple interactions in relationship interventions. Results from Chapters 2 and 3 indicate that changes in observed interactions were not consistently aligned with self-reported data, underscoring the unique insights that observational measurements can offer. For instance, behavioral observations make it possible to capture subtle, non-verbal cues (e.g., tone of voice, body language, eye contact, and facial expressions), as well as the fine-grained dynamics of couple interactions as they unfold in real time (Charania & Ickes, 2006). This provides a deeper understanding of relational behaviors that may not be consciously acknowledged or reported by the participants themselves (Kerig & D. H. Baucom, 2004). Additionally, observations might capture immediate, emotionally driven responses that couples might later downplay or rationalize in self-reports. These discrepancies between observational data and self-reports underscore the complexity of couple dynamics, suggesting that combining both methods provides a more nuanced and comprehensive view of couple interactions.

Second, I am aware of no previous study on observed couple interactions in couple therapy that has specifically examined coparental interactions (i.e., interactions between two coparents regarding coparenting issues). Thus, the results from Chapters 2 and 3 provide new insights into how parent couples in therapy navigate disagreements within the coparenting relationship, such as issues related to a child's education or bedtime routines. Findings from Chapter 3 reveal that fathers were more defensive, while mothers tended to adopt a more domineering stance. This aligns with previous research on coparenting dynamics, which suggests that mothers often position themselves as the parenting "experts"—being domineering or gatekeeping—while fathers may retreat from parenting roles and become defensive (Altenburger et al., 2018; Schoppe-Sullivan et al., 2008). Additionally, these results contribute to the literature by illustrating how couples manage discussions around shared stressors—stressors that are significant to both parents and central to their relationship. This research enhances our understanding of how parent couples communicate and handle conflicts, offering valuable insights into the relational strategies that promote or hinder relationship functioning during challenging times.

Third, previous studies have often investigated couple relationships without specifying the type of relationship assessed, whether romantic or coparenting. However, the studies from Chapters 2 and 3 specifically focus on parent couples, examining both the coparenting and romantic relationships. This focus is important because romantic partners who are also parents manage both a romantic and a coparenting relationship, as they share responsibilities in raising their children (Feinberg, 2003). Additionally, only a few studies have explored how the coparenting relationship itself changes as an outcome of therapy. Chapter 3 focused exclusively on the coparenting relationship, showing that both mothers and fathers reported

significantly more positive coparenting after the provided treatments. These findings are consistent with previous studies indicating that couple therapy can enhance the quality of the coparenting relationship (e.g., Gattis et al., 2008; Vaudan et al., 2016), thereby contributing to a more comprehensive understanding of how therapeutic interventions can support the coparenting relationship.

Fourth, previous empirical literature on observed couple interactions in couple therapy has mainly focused on investigating the association between those interactions and the romantic relationship (e.g., K. J. W Baucom et al., 2015). Chapter 2 contributes to the literature by exploring the dynamics within both coparenting and romantic relationships, revealing that these two domains do not necessarily evolve together. This finding aligns with research by Le et al. (2016), which demonstrated that changes in coparental dynamics do not always correspond with changes in romantic relationship quality, suggesting that these aspects of a couple's relationship can function independently.

Finally, Chapter 3 enhances our understanding of how different coding systems and analytical strategies can influence the interpretation of couple interactions in therapy. The principal component analysis of observed interactions in my study indicated that behaviors could be represented on a continuum from positive to negative, rather than being divided into multiple distinct dimensions, as found in previous studies (e.g., Sevier et al., 2008). In my study, I used an adapted version of the Specific Affect Coding System (SPAFF; Gottman & Krokoff, 1989) with 12 verbal codes, whereas Sevier et al. (2008) employed two rating systems with a total of 23 codes. Additionally, my data was drawn from a 5-minute conversation, while Sevier et al. (2008) analyzed four 10-minute interactions. These differences suggest that the framework used for coding and the duration of observed interactions might

significantly shape the conclusions drawn about couple interactions and influence our understanding of these interactions within relationship interventions.

Chapter 4

By focusing on same-gender couples, this study advances diversity in couple relationship intervention research and makes a valuable contribution to LGBTQ+ literature. While previous research, such as Whitton et al. (2016), investigated same-sex couples' observed interactions in a relationship education program, their approach differed in several ways. Whitton et al. (2016) assessed couples' interactions during problem discussions before and after the program, coding these interactions on a 9-point scale for constructive and destructive behaviors, which were then averaged into measures of negative and positive communication for each partner. In contrast, my study examined couple interactions during the intervention itself, as couples applied a conversation method they had learned. Additionally, my study utilized the dynamic dyadic systems perspective, a more recent analytical approach that uses mathematical modeling to study real-time conversation data, allowing for a more nuanced exploration of how conversations evolve and capturing the non-linear nature of partners' conversational dynamics (Brinberg & Lydon-Staley, 2023). Using this approach, my findings highlight how couples utilized the methods taught during their conversations, demonstrating their application of strategies from the relationship education program.

In relation to the broader LGBTQ+ literature, my study advances our understanding of how same-gender couples navigate stress through learning effective communication. Given that same-gender couples may face additional stressors due to their marginalized identities (Meyer, 2003), examining their communication on stressful topics is essential. While research shows that difficulties in communication

and coping with stress can negatively impact relationship quality (Randall & Bodenmann, 2017), my study demonstrates that same-gender couples largely follow recommended communication strategies during stressful discussions. Specifically, the findings highlight the importance of exploratory communication (e.g., restating or clarifying a partner's words) and supportive communication (e.g., acknowledging a partner's experience and sharing understanding). These results suggest that the couples effectively followed the instructions and applied a communication method that helped them address and discuss stressful topics within the relationship, providing a strong foundation for future research on the intervention's effectiveness.

Significance of the results

By employing observational methods to analyze couple interactions, this research offers a detailed, real-time examination of how partners communicate, manage conflict, and support each other during challenging situations, such as conflicts or periods of stress. This approach captures subtle behaviors, emotional exchanges, and non-verbal cues, providing an expert perspective on the dynamics between partners and enabling a nuanced understanding of these interactions. The findings from my dissertation reveal the complexity and variability in couple dynamics, particularly under stress. By understanding these detailed dynamics, couples can become more aware of their interaction patterns and develop strategies to enhance their relationship quality, ultimately fostering more supportive and fulfilling partnerships.

For parent couples, the findings highlight gender-specific behaviors, with mothers often displaying domineering behavior and fathers tending to be more defensive. Encouragingly, these patterns tend to decrease with therapy, suggesting that mothers may reduce their "expert" stance while fathers become more actively engaged in the coparenting relationship. This shift indicates that therapy can positively influence interactional dynamics, offering hope for couples navigating the transition to parenthood or facing challenges in their coparenting relationship. Understanding that professional support can effectively modify interaction patterns should motivate couples to seek help and work on their dynamics.

For same-gender couples, the research emphasizes how external societal pressures and internalized stress can affect partner interactions and support. The findings demonstrate that couples who learned effective communication techniques to support each other during stressful situations were able to apply these strategies

successfully. This suggests that same-gender couples can benefit from learning such techniques, which can help alleviate the effects of stress, including minority stress, on their relationships.

Finally, using observational methods to study couple interactions provides clinicians with valuable evidence on the importance of focusing on real-time interactions. This approach offers insights into how specific interaction patterns and shifts occur, highlighting the impact of therapeutic interventions on the unique challenges and dynamics different types of couples face.

Limitations

The research conducted as part of this dissertation contains several limitations that pertain to the generalizability of the results, the videotaped conversation tasks, and the coding procedures. I will discuss these limitations below and propose future perspectives to mitigate them.

Generalizability of the Results

In Study 2 (Chapter 3), I encountered a power limitation related to the sample size. With data from 64 couples, the ability to detect small changes from pre- to posttherapy was constrained. As a result, I may not have fully captured clinically significant shifts in the observed couple interactions resulting from the intervention. However, some of the results in the study bordered on significance, suggesting that with a larger sample size, they might have reached statistical significance. These marginal findings highlight gender differences, such as fathers showing more interest and validation, and mothers displaying more criticism. The increased criticism among mothers supports our hypothesis and aligns with previous literature suggesting that mothers often position themselves as parenting experts (Schoppe-Sullivan et al., 2008), as well as with the traditional Swiss household arrangement where mothers typically spend more time on childcare. Conversely, the marginal findings indicating that fathers exhibit more interest and validation suggest a positive dynamic, where fathers might rely on and trust mothers in their parenting role, affirming their expertise.

Additionally, Study 1 (Chapter 2) and Study 3 (Chapter 4) both face limitations in terms of the generalizability of the results as these were case studies. Nonetheless, although not generalizable, the depth of data obtained from Study 1 (Chapter 2) offers valuable clinical insights into the couples' dynamics in couple therapy and the findings

from Study 3 (Chapter 4) provide useful information regarding the fidelity of the 3-phase method.

Another important factor to consider for Study 3 (Chapter 4) is the wide age range among participants, which may have introduced variability in the results. Previous studies have demonstrated differences in dyadic coping across different age groups, such as young adults and those in midlife (M. D. Johnson et al., 2016). Similarly, research by Bühler and Orth (2024) found that relationship satisfaction changes systematically across the life span, with different trajectories observed depending on age and relationship duration. This suggests that future research should either restrict the age range of the sample or include age as a covariate to adjust for its effects.

Furthermore, I would like to highlight that although the sample sizes in my studies were small, they are typical of intervention research, particularly given the significant challenges of collecting data from vulnerable populations, such as distressed couples or individuals with minoritized sexual orientations or gender identities. For example, in Studies 1 and 2 (Chapters 2 and 3), it took approximately five years to recruit 84 couples who completed both pre- and post-intervention assessments. Despite initial interest from many couples, some ultimately chose not to participate, often citing privacy concerns related to being audio- or video-recorded. Similarly, in Study 3 (Chapter 4), it took one year to recruit nine couples willing to engage in a weekend-long couple relationship education program. Some potential participants who initially expressed interest decided not to participate due to the time commitment required. These recruitment challenges underscore the difficulties inherent in conducting intervention studies but also highlight the importance of collecting this data to provide valuable insights for clinicians and improve clinical

practice. While the small sample sizes reflect the practical limitations of intervention research, collecting larger and more representative samples in future studies could enhance the generalizability of the findings and help uncover effects that were not detectable in smaller samples. In the context of Studies 1 and 2, a larger sample size could allow for a more nuanced analysis of the SPAFF codes, potentially revealing additional categories beyond the current positive and negative dimension, such as subtle shifts in emotional support, withdrawal, or repair attempts during conflict. This would capture greater variability in behaviors and provide a more comprehensive understanding of changes in couple interactions from pre- to post-therapy. Such findings could result in more robust and reliable insights, offering a clearer picture of how parent couples navigate disagreements on coparenting issues.

Conversation tasks

All three studies contain limitations related to the conversation tasks in which the couple interactions were observed. These pertain, yet are not limited to, the length of the tasks (Chapters 2 and 3) and the topic chosen by the participants (Chapters 2, 3, and 4).

Length of the Tasks

Both Studies 1 and 2 (Chapters 2 and 3) are limited by the short duration of the conversation task, which was set at five minutes. This length was because in the broader RCT study (i.e., Darwiche et al., 2023) partners were asked to complete four conversation tasks. During these tasks, they discussed agreement and disagreement topics both in their romantic and coparenting relationships. As the focus of the study was to investigate the interactions about a coparenting issue, I excluded the discussions on the romantic relationship (e.g., topics about the in-laws, or finances). Because the micro-coding of couple interactions is extremely time-consuming (e.g., one hour of

coding for every five minutes of conversation), I had to choose which task (i.e., agreement or disagreement) to code for this dissertation. Exploratory coding showed that there was more emotional variability in the disagreement task compared to the agreement task, therefore I chose to include the coparenting disagreement conversation task. Nonetheless, running studies with longer conversations could produce observational data with greater variability in the behaviors observed. Couples' patterns of escalation or de-escalation, for instance, might unfold over a more extended period than five minutes (Schoebi & Randall, 2015). Additionally, longer conversations offer richer data, potentially uncovering multiple dimensions in observed behaviors, unlike the single dimension identified in my second study.

Topic Discussed in the Tasks

An important factor not controlled for in Studies 1 and 2 (Chapters 2 and 3) was whether the couples discussed the same disagreement both before and after therapy. This could have influenced the observed behaviors, as some topics may be inherently more sensitive or triggering than others. As highlighted by Weber et al. (2023), both the topic and the salience of the topic are crucial when examining couples' interactions. Their study found significant variability in communication quality depending on the topic being discussed, indicating that certain topics, such as finances or racial discrimination, can inherently influence how couples communicate. The relevance or salience of the topic to the couple, such as stressors related to finances or child behavior problems, also affects communication quality. Therefore, if couples had discussed the same topic pre- and post-therapy, I could have compared the observed behaviors in both discussions, which might have produced different results on the change observed in the couple interactions.

However, I opted to let the couples choose their conversation topic so that they could discuss the issue most relevant to them. Additionally, as the discussions took place in a rather contrived setting (i.e., the participants were having the conversations alone in a room in front of a camera), I also believed that letting the couples choose would facilitate the discussions. I asked the couples to focus on disagreements that occurred frequently, rather than one-off disagreements so that they could refer to specific examples and not be stuck during the conversation, which could have led to blanks.

In Study 3 (Chapter 4), the participants were also free to choose the conversation topic, thus it was not possible to compare the couple interactions across topics. The reason I did this is in line with what I mentioned above; the participants were instructed to discuss a recent and recurrent stressful situation within their relationship with specific instructions as to how to communicate the stress. Had I enforced specific topics, the course of conversations could have diverged significantly, with certain topics potentially being irrelevant or non-triggering for some participants.

Furthermore, Study 3 (Chapter 4) introduced another limitation, as it employed structured and facilitated tasks, which differed therefore from naturally occurring conversations. However, as the goal of the couple relationship education program was to teach a technique, the facilitator's presence was necessary to help partners engage in the 3-phase method and guide the couples during the task. This was crucial so that they could properly learn the technique and not incorrect patterns for future application in their daily lives without the facilitator. To assess the practical effectiveness of the 3-phase method and how couples apply this method autonomously, an interesting avenue would be to analyze the extent to which couples successfully implement this method outside the intervention setting. This could be done by collecting video-recorded

conversational data from couples in their natural environments, such as their homes, using the Electronically Activated Recorder (EAR). The EAR is software that can be embedded in any portable telephone, and it records brief segments of audio from participants' daily lives, thus providing an ambulatory ecological assessment (Mehl, 2017).

Coding

All three studies have limitations related to the coding of couple interactions. Specifically, Studies 1 and 2 (Chapters 2 and 3) faced challenges with the coding system (SPAFF) and inter-rater reliability, while all three studies were affected by limitations stemming from observer-related factors.

SPAFF

Studies 1 and 2 (Chapters 2 and 3) have limitations related to both the coding system (i.e., SPAFF) and the recording setup. Although the coders received intensive training and followed a manual with specific coding rules, I identified three key limitations with this approach.

The first limitation is that the SPAFF code for neutral behavior does not differentiate between individuals who do not speak and those who maintain neutral communication (e.g., discussing weather or describing procedures). Additionally, if a behavior fell outside the outlined categories of the manual, it had to be coded as neutral. As a result, the data collected does not distinguish between silent partners, those who shared neutral information, or those who displayed behaviors that did not fit into any SPAFF category (e.g., humor). To address this, I recommend that researchers interested in using SPAFF in future studies include additional categories: one for genuinely neutral communication, another for silence, and a third for

uncodable behaviors. This would provide a more accurate and nuanced picture of couple interactions.

The second limitation is that the SPAFF was not specifically designed for analyzing couple interactions within the context of relationship interventions. While the coding system is comprehensive in capturing positive, negative, and neutral behaviors, there are additional aspects of communication and emotional expression that could provide deeper insights into couples' dynamics and the effectiveness of interventions. To enhance its application in relationship intervention research, it could be beneficial to add codes for behaviors such as repair attempts—verbal or non-verbal efforts to de-escalate tension and repair the interaction after a conflict—and support-seeking, which involves verbal expressions or behaviors where one partner seeks emotional or practical support from the other. Incorporating these codes could offer richer data on how couples navigate conflicts and support each other, which are critical aspects of relationship functioning and therapeutic outcomes.

The third limitation concerns the recording setup for the conversations. The recordings were made using a single front-facing camera that captured both participants simultaneously. However, optimal recording for SPAFF coding would require three cameras: one focused on each partner's face for close-ups and a third camera capturing the entire scene. The close-up cameras would have made it possible to analyze and code facial expressions and pupil characteristics with even greater precision. That said, it is important to highlight two things. Firstly, the setting was adopted at the study's early stages, before it was clear that SPAFF would be used for coding. Secondly, the complex set-up for an optimal recording would have involved filming the tasks in a more controlled environment, such as a dedicated room. However, to encourage participation in the tasks and offer more flexibility to the

participants, the conversations were recorded in various locations, such as the couples' homes.

Interrater Reliability and Observer-Related Factors

In study 2 (Chapter 3), interrater reliability analyses demonstrated moderate agreement in the observational data ($\kappa = .63$; Hallgren, 2012). While not particularly low, this level of agreement could have been better, suggesting that variability in the coding may have affected the quality of the observational data, potentially contributing to the lack of significant results. One possible reason that could explain why the interrater reliability was not ideal could lie in observer-related factors. In the coding procedures, both for the SPAFF (Studies 1 and 2) and the SCAR (Study 3), I noticed that there were cultural differences between the coders which caused recurrent and substantial disagreements on some codes. For instance, for the SPAFF coding, I observed that one coder often coded criticism instead of contempt. After discussing this issue, the coder raised that she considered this behavior as normal criticism and that it was really difficult for her to grasp contempt as it was not part of her cultural background (i.e., this person did not identify with Swiss culture). For the SCAR coding, I noticed that the cultural difference (i.e., I identify as Swiss and the other coder as North American) led to differences in the comprehension of certain expressions or sentence structures, and thus also influenced the coding of the couple interactions.

In studies examining observed couple interactions, the coding process is often shaped by the cultural background, knowledge, and personal experiences of the coders (B. R. Baucom et al., 2017). For example, Margolin et al. (1998) noted that coders bring their characteristics, such as gender, ethnicity, and life experience, to the coding task, which can influence their interpretation of behaviors. Similarly, Heyman (2001)

pointed out that what is considered "healthy" couple behavior is often culturally determined. While the influence of a coder's characteristics can add depth and relevance to behavioral assessments, it also introduces variability that is inherent in human observation. As a suggestion for future research, coders could maintain a journal of their observations, adding comments in the coding file when they notice that their interpretations might be influenced by their characteristics. This file could then be made openly accessible along with the data. While this would not result in a stronger reliability, it could provide additional insights into how personal characteristics may shape how couple interactions are understood and interpreted. Finally, an interesting avenue that may mitigate the cultural informant bias, and other biases related to observational measures, is the use of recent technologies, particularly AI, to code behavioral data. I will therefore expand on this in the next section.

Future Perspectives

The history of behavioral observation research indicates that in the early 1990s researchers turned away from observational methods to less time-intensive measures, such as self-report questionnaires. However, with the development of mathematical modeling and new technologies, the 21st century could be a revival for behavioral observation of couple interactions, and AI applications in this context are continually evolving. AI may bring a new dynamism to the use of observational methods, and I am positive that the field is likely to undergo considerable change over the next few years. Thus, in this section, I reflect on the use of AI for the exploration of couple interactions.

The Development and Application of AI Coding

In recent years, extracting information on human behavior has become of interest to computer scientists who have turned their attention to analyzing audio- and video-recorded behavior (Bulling et al. 2023), especially through programming algorithms that enable automated ways to code these data. Machine learning algorithms, such as natural language processing are often employed to extract meaningful insights from spoken or written interactions between partners. For example, social signal processing programs (Pentland, 2007) possess the ability to autonomously generate a consistent assessment of nonverbal behavior (e.g., gestures or facial expressions) and verbal cues (e.g., word use) (Bulling et al., 2023).

There are already several programs powered by AI, some of which are specific to coding nonverbal behaviors. For instance, EmoPy is a free open-source toolkit that allows researchers to code facial expressions (Gaggioli, 2019). Motion Energy Analysis (MEA) is another openly accessible program that assesses the synchrony of movement between two individuals (Ramseyer, 2020). For instance, MEA has been

used to assess nonverbal synchrony between partners participating in a relationship education program (Moran, 2018). Specifically, the results demonstrated that greater synchrony was related to greater use of the pronoun *we* and less use of the pronouns *me* and *I*, highlighting interesting associations between nonverbal and verbal behaviors (Moran, 2018).

Additionally, AI-powered websites enable the automated transcription of conversational data and create excellent initial transcripts. These transcripts can in turn be useful for researchers relying on AI programs specific to coding verbal data. For instance, Linguistic Inquiry and Word Count (LIWC; Pennebaker et al., 2001) program extracts quantitative aspects of language use, such as pronoun use. Meier et al. (2021) used LIWC to assess pronoun use (i.e., *we-talk*, *I-talk*, and *you-talk*) among couples during conflict and dyadic coping interactions to assess relationship functioning. The study found that pronoun use affects relationship dynamics differently depending on the context. Finally, Bidirectional Encoder Representations and Transformations (BERT; Devlin et al., 2019) is a program capable of assessing the message the speakers are conveying through their words by also considering the context in which a given word occurs.

Strengths and Limitations of AI Coding in Analyzing Couple Interactions

When considering the merits and drawbacks of employing AI for coding couple interactions in comparison to coding undergone by human researchers, several key points emerge. Relying on AI for coding couple interactions presents notable advantages, primarily in terms of significant time savings compared to human coding efforts (Biggiogera et al., 2021; Bulling et al., 2023). Thus, this efficiency allows for the analysis of more extensive datasets. For instance, in the context of this dissertation, this would have meant the possibility of coding therapy sessions, providing

information on the therapeutic process, and thus gaining further insights into the relationship interventions. Furthermore, an automated behavioral coding system may be able to uncover a wider range of behaviors in the coding, and recurring themes that may not be immediately apparent to human observers (Biggiogera et al., 2021; Bulling et al., 2023). In the context of this dissertation, such a system might have facilitated the identification of interaction patterns and provided a more comprehensive content analysis of the couple interactions. Another advantage of using AI to code couple interactions is the program's ability to remain consistent over time, while manual coding done by human coders can be influenced by fluctuations in attention or mood (Biggiogera et al., 2021; Bulling et al., 2023). Moreover, human coding is susceptible to observer drift, which Kazdin (1977) defined as "the tendency of observers to change how they apply the definitions of behavior over time" (p.143). AI coding could therefore avoid both these issues by providing stable, uniform coding criteria without the variability introduced by human factors.

On the downside, AI systems may struggle with grasping the nuanced context of human interactions, especially when it comes to coding social behaviors such as sarcasm, humor, or irony, which are difficult to discern from the spoken words or the tone of voice alone (Biggiogera et al., 2021; Bulling et al., 2023). Inferring a complex social message requires the reference to verbal cues in conjugation with nonverbal and paraverbal cues (Bulling et al., 2023). Currently, it is unclear how well AI can infer those messages in comparison to a human coder. Finally, the so-called "cultural informant approach" highlights that human coders can rely on their cultural background and draw from it to perceive and interpret the interactions they are observing (Coan & Gottman, 2007). Critics of the cultural informant approach argue that one advantage of AI is its ability to provide coding that is not influenced by

individual characteristics, such as gender, ethnicity, life experience, or cultural background. However, this point is debatable, as AI systems rely on aggregating the knowledge and information provided by numerous individuals, which means they may incorporate a broader range of cultural contexts and information than a single human code.

Research Comparing AI and Human Coding in Analyzing Couple Interactions

While I did not find a study making a direct comparison between automated and human coding. I found one study comparing two automated systems based on the accuracy of these programs in predicting the coding done by humans (Biggiogera et al., 2021). In this study, the authors compare LIWC, a traditional program based on linguistic features that extracts word count by using an existing list of words and categories (e.g., personal pronouns, positive/negative words, and social process), to BERT, a program based on natural language processing that is capable of understanding tasks such as natural language inference, proceed with question answering, and perform sentiment analysis.

This study aimed to investigate how linguistic and paralinguistic features in 10-second sequences of couples' conflict interactions could be used to predict how the same sequence would be perceived and rated by human coders as positive or negative communication behavior. The two programs examined in this study therefore coded the transcripts of the couple interactions and not the audio- or video-recordings. The results of this study showed that the BERT model performed better than LIWC, meaning that the features of the latter did not have a discriminative potential for prediction. Although BERT performed best in this study, it is important to highlight that the program only reached 69.18% accuracy with the coding produced by the human coders. Finally, the authors also raise the concern that because of the data they

are trained on, BERT models seem to have encoded gender and racial bias. Thus, the authors stress the need for further research on couple interactions with automated programs.

Conclusion

Out of curiosity, I also conducted a small experiment in which I asked ChatGPT 3.5 (i.e., a language model AI, which cannot directly observe or code human interactions in real time): “If you had to code couple interactions, how well would you perform?”. This was the response on February 16th, 2024: “As an AI language model, I can offer assistance in analyzing and interpreting couple interactions based on provided text or data. I can help identify patterns, themes, and potential insights within the interactions. However, my performance would depend on the complexity and nuances of the interactions, as well as the accuracy of the data provided to me. While I can provide valuable insights, my analysis may not be as nuanced or accurate as that of a human expert with specialized training in couple therapy or observational methods”.

I conducted this experiment again on August 29th, 2024 with ChatGPT 4o (i.e., a more advanced version offering enhanced understanding, creativity, accuracy, and context management) and this was the response: “As an AI, I can analyze and simulate couple interactions through text or data analysis, pattern recognition, sentiment analysis, and basic coding simulations. I can help identify patterns, themes, and potential insights, as well as create interactive models for exploring various scenarios. However, my insights are limited by the complexity of human emotions and interactions, and I lack the nuanced understanding of a human expert in fields like couple therapy or psychology. While I can provide valuable assistance, the depth and

authenticity of my analysis may not fully capture the subtleties of real human relationships”.

While AI provides certain advantages as compared to human coding, AI programs first need to be trained with human-coded data and validated against them to ensure accuracy and reliability. Additionally, AI algorithms may require ongoing refinement and fine-tuning to achieve the desired level of precision in analyzing complex dyadic interactions. Thus, for now, it seems that AI cannot entirely replace the human coder and that it would provide the best results when used in conjunction with human expertise. Finally, even though the technological advancements of the 21st century offer interesting solutions to address the challenges related to collecting and analyzing data from behavioral observation, these automated programs also raise questions regarding the confidentiality of the participants’ data, and even more importantly they raise ecological issues as they are a huge computational burden and have a high energy consumption.

General Conclusion

In this dissertation, I utilized the observation of couple interactions as a method for analyzing relationship interventions, aiming to evaluate intervention effectiveness (Studies 1 and 2) and fidelity (Study 3). Overall, my studies make significant contributions in three key areas. Firstly, the observation of couple interactions is an underutilized method compared to self-reports. It provides a detailed, moment-by-moment analysis of couple dynamics in real time, capturing nuances such as non-verbal cues, emotional exchanges, and behavioral patterns. This approach allows researchers to gain deeper insights into the immediate, interactive processes offering a more comprehensive understanding of how couples navigate their interactions.

Secondly, I focused on populations enrolled in relationship interventions, as most observational research on couple interactions has concentrated on those not involved in such settings. By addressing this gap, my dissertation contributes valuable insights to the study of relationship interventions. Observing couple interactions serves as a valuable tool for evaluating the effectiveness of interventions (Wampler & Harper, 2014). By analyzing the frequency and quality of interactions between the initial and final therapy sessions, I assessed the impact of interventions on both couple interactions and overall relationship functioning. Additionally, identifying changes in interactional dynamics allowed me to examine the fidelity of the couples to a method taught during the intervention. Therefore, this dissertation includes both outcome-focused studies, which assess the impact of interventions, and process-related studies, which examine how interactions unfold during the intervention.

Thirdly, I examined interactions within understudied groups in relationship intervention research, specifically parent couples and same-gender couples.

Responding to the call for greater diversity in research, this focus aligns with the evolving field of relationship interventions, which increasingly emphasizes the importance of considering gender, sexual orientation, and other social dimensions in understanding couples' experiences.

The findings from this dissertation highlight that changes observed in couple interactions do not always align with self-reports (Chapters 2 and 3). Additionally, in the broader sample (Chapter 3), analyses of the observed interactions showed that while overall changes were not significant, certain behaviors, such as defensiveness and domineering, demonstrated notable changes. These results also revealed gender differences, with mothers more likely to display domineering behavior and fathers more prone to defensiveness. Therefore, the findings from Chapters 2 and 3 underscore the importance of using observational methods to study couple interactions within relationship interventions, as they enhance our understanding and monitoring of progress in therapy.

Moreover, the results from the third study (Chapter 4) demonstrated a strong alignment between the identified turn types in each phase and the overall procedure of the 3-phase method. The couples' conversation patterns largely conformed to the roles and instructions of the 3-phase method, illustrating that the observation of couple interactions, combined with recent approaches using mathematical modeling to analyze conversational data, allows for effective examination of fidelity to a method taught in interventions.

Overall, my results emphasize the usefulness and validity of observational methods for assessing couple interactions within the context of relationship interventions. These methods provide detailed, moment-by-moment data, enabling a nuanced analysis of couple dynamics. The findings demonstrate the unique insights

that observational methods provide beyond self-reports, advocating for the combined use of both approaches. This integration allows for a more comprehensive understanding of the complexity of couple interactions, offering a deeper insight into relationship dynamics.

Looking ahead, recent technological advancements, particularly in AI, offer significant potential for the observation of couple interactions by reducing the time burden associated with human coding, which can currently deter researchers from using observational methods. However, researchers should remain cautious, as while AI can enhance efficiency, it remains unclear whether it can fully replace human coders—a topic that has yet to be thoroughly investigated. At this stage, a balanced approach that integrates both AI and human input may be the most effective strategy for comprehensively understanding couple interactions. Despite these uncertainties, I am optimistic that continued advancements in this field will lead to more innovative and effective methods in the years to come.

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