COMPUTER-MEDIATED RELATIONAL MAINTENANCE AND RELATIONSHIP QUALITY: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

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The purpose of the present study was to examine computer-mediated relational maintenance for its impacts on different dimensions of relationship quality. A systematic literature review was conducted to determine: (a) the extent to which findings related to computer-mediated relational maintenance behaviors and relationship quality correspond with typologies derived from offline relational maintenance behaviors, and (b) what overarching themes exist in current literature regarding the impacts of computer-mediated relational maintenance on the quality of nonplatonic relationships. Findings revealed support for six relational maintenance categories as contributing to relational maintenance via CMC: positivity, openness, assurances, social networks, conflict management, and surveillance. Furthermore, jealousy and idealization emerged as noteworthy relationship outcomes associated with the use of CMC for relational maintenance. Overall, CMC use between nonplatonic partners was associated with more positive than negative relationship outcomes. Implications, limitations, and directions for future research are discussed.

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Introduction

Given the widespread adoption of technology and the integration of its tools into our daily lives, the maintenance of relationships has evolved to include various methods of communication. Computer-mediated communication (CMC), defined as communication that occurs through two or more electronic devices (Dennis, 2005), now constitutes a significant portion of our interpersonal interactions. This includes, but is not limited to, communication that takes place through instant messaging, chat rooms, email, social networking sites, text messaging, and even phone calls. As interpersonal communication partially migrates to computer-mediated environments, communication scholars are faced with a new realm of human behavior to examine.

A great deal of relational maintenance research has examined the processes involved in using CMC to maintain relationships (e.g., Canary, Stafford, Hause, & Wallace, 1993; Dainton & Stafford, 1993; Rabby, 2007; Stafford & Merolla, 2007; Stafford, Merolla, & Castle, 2006). While many of these research efforts have used Stafford & Canary's (1991) typology as the basis of further inquiry (Houser, Fleuriet, & Estrada, 2012; Johnson, Haigh, Becker, Craig, & Wigly, 2008; Rabby, 2007; Wright, 2004), others have speculated that the examination of relational maintenance in computer-mediated environments should be carried out independently of findings in offline environments (e.g., Tong & Walther, in press; Tidwell & Walther, 2002). Specifically, Tong & Walther (in press) insist, "Simply applying old relational maintenance typologies to new mediated environments will not advance explanatory or predictive power" (p. 30). Instead, the authors suggest that future research should aim to determine "what emergent dimensions of relational maintenance may surface as a result of additional channels…with specific respect to computer-mediated relational maintenance" (p. 31). In an attempt to guide this debate, the

present study examines the extent to which offline relational maintenance strategies translate in online contexts. Furthermore, the study aims to identify, through the examination of extant literature, the impacts of computer-mediated relational maintenance behaviors (CMRMB) on dimensions of relationship quality and pinpoint the potentially unique relationship outcomes associated with computer-mediated relational maintenance (CMRM).

Relational Maintenance

The phenomena involved in maintaining relationships have received an abundance of scholarly attention during the past few decades. Scholars have proposed varying definitions and typologies to delineate the behaviors involved in relational maintenance. This has led to variations in research foci within the discipline, where researchers approach the exploration of relational maintenance from different conceptual backgrounds. The literature commonly describes relational maintenance in terms of four different relationship goals: (a) Maintaining stability; to keep a relationship active and avoid its termination, (b) Maintaining the status quo; to maintain the current status and structure of a relationship, (c) Maintaining quality; to maintain satisfaction within a relationship, and (d) Repairing problems; to resolve issues or threats to a relationship (Canary & Zelley, 2003). Given the crucial role of quality in interpersonal relationships, the present study will focus on dimensions of relationship quality in examining the impacts of CMRMBs on couples.

Relationship quality is defined as the "subjective global evaluation of a relationship," and is the "dominant construct studied in the literature on relationships" (Fincham & Rogge, 2010, p. 227). The importance of quality in close relationships has been emphasized in social psychology, with relationships of high quality associated with improvements in physical and mental well-being and relationships of poor quality serving to undermine well-being and health (Baumeister

& Leary, 1995; Uchino, Cacioppo, & Kiecolt-Glaser, 1996). In efforts to assess the determinants of relational quality, relational maintenance scholars have aimed to organize and systematize the discipline by grouping relational maintenance into different dimensions of goal-oriented behaviors.

In line with these efforts, Stafford and Canary (1991) uncovered a finite set, or typology, of relational maintenance behaviors. Within this typology are five dimensions of relational maintenance strategies; assurances, openness, positivity, task sharing, and social network. *Assurances* involve confirming the importance of one's relationship; thus, reducing uncertainty about the relationship's future. *Openness* describes disclosures that assist individuals in knowing the nature of their relationship and its status. *Positivity* involves behaving in an optimistic, pleasant, and uncritical way toward one's partner. *Task sharing* focuses on one's willingness to fairly assist his/her partner with duties that support the relationship. Finally, *social network* is described as the use of third-party interactions (e.g., a unified support system of friends and family) to maintain one's relationship. This set of behavioral categories has been very popular in guiding interpersonal inquiry for past couple of decades and has been used to examine relational maintenance in both online and offline contexts.

The original Stafford et al. (1991) typology has been expanded in subsequent research, leading to an updated typology with two additional RMB categories: *conflict management* and *advice* (Stafford et al., 2000). Nonetheless, further updates and expansions may be necessary. Tong & Walther (in press) suggest that CMC is changing the ways we perform relational maintenance behaviors, and that "offline relational maintenance studies do not necessarily replicate in online contexts," (p. 5). The authors also speculate that typologies (e.g., Stafford & Canary, 1991; Stafford et al., 2000) may need to be updated or reconceptualized in light of new

computer-mediated behaviors. Therefore, the present review was guided by the following research question:

RQ1: To what extent do findings related to computer-mediated relational maintenance behaviors and relationship quality correspond with typologies derived from offline relational maintenance behaviors?

Computer-Mediated Communication and Relational Outcomes

The relational maintenance behaviors enacted through CMC have been explored in the context of different relational outcomes (Gunn & Gunn, 2000; Johnson, Haigh, Becker, Craig, and Wigley, 2008; Johnson et al., 2008; Wright, 2004). These efforts have focused on determining links between CMC behaviors and different dimensions of relationship quality. For instance, keeping in touch with distant loved ones through CMC has been found to boost feelings of love and closeness in relationships (Gunn & Gunn, 2000). In addition, research has revealed that couples who chat using instant messaging services are more likely to share private information with one another, which is believed to assist in relational maintenance (Johnson et al., 2008).

Satisfaction, which refers to "the positive versus negative affect experienced in the relationship" (Rusbult et al., 1998, p. 359), has been a particularly popular measure of relationship quality, with strong links drawn between satisfaction and the integration of CMC in relational maintenance strategies (Wright, 2004). Commitment, which includes the decision to remain with one's partner in the short term and to plan for the future with that partner (Oord, 2008), and intimacy, which refers to "close, connected, and bonded feelings in loving relationships" (p. 332), have also been popular measures, with scales such as Rusbult's Investment Model of Commitment (Rusbult et al., 1998) and Miller's Social Intimacy Scale

(Miller, 1982) frequently used to assess nonplatonic relationship quality in CMC studies. Nonetheless, satisfaction remains the most frequently used, and relational maintenance itself is described as involving "processes that not only sustain the relationship but also ensure relationship satisfaction" (Billedo et al., 2015, p. 153). Because the literature situates satisfaction as a measurable outcome variable with which researchers can assess the success and relevance of different relational maintenance behaviors, the present review focuses on satisfaction as a guiding construct in assessing links between CMRMBs and quality in nonplatonic relationships.

However, just as it is possible that relational maintenance typologies, and their corresponding behavioral categories, might deserve reconsideration in the relatively new context of CMC, scholars' approach to examining relationship outcomes associated with CMRM might also need updating. While satisfaction and other prevalent measures have earned their popularity by continuously serving as informative and reliable indicators of relationship quality and longevity (e.g., Sbarra & Law, 2009), it is possible that CMRM impacts interpersonal relationships in ways that traditional RM does not, and vice versa. A conclusive understanding of the impacts of CMRMBs on the quality of nonplatonic relationships involves the consideration of many potentially influential factors. Therefore, the present study was also guided by a second research question:

RQ2: What overarching themes exist in current literature regarding the impacts of computer-mediated relational maintenance on the quality of nonplatonic relationships?

Method

The systematic literature review (SLR) is defined as a "literature review that is designed to locate, appraise, and synthesize ... evidence relating to a specific research question to provide informative and evidence-based answers" (Dickson, Cherry, & Boland, 2003, p.3). SLRs are known for their prevalence in health care research, but are also common prerequisites for empirical research funding, and are used to inform decision making in various disciplines and professions. Because SLRs give full and impartial accounts of what has been published thus far on a given topic, they are valuable in helping practitioners and researchers evaluate the status quo of knowledge on a particular topic, contribute to the development of theory, or determine directions for future research (Kitchenham and Charters, 2007).

Systematic literature reviews differ from other reviews in that they involve intricately described and transparent steps for searching literature, extracting data, quality assessments, and data synthesis. The papers included in systematic reviews are referred to as primary studies, and the systematic literature review is considered to be a form of secondary study. Opting to conduct primary research would involve time and sample constraints, which could jeopardize the generalizability of findings. The systematic literature review allows for the inclusion of many different study designs and populations without the concerns of conducting large-scale primary research. Furthermore, the systematic literature review methodology allows the researcher to grow familiar with many different research methodologies through the process of reviewing many different primary studies. It also promotes insight into the limitations and strengths of published research; helping the researcher to recognize crucial elements of research quality by evaluating the works of others. It is also worth noting that although the systematic literature review is often a prerequisite for meta-analysis, the two methods vary. While a systematic review

includes a protocol-based systematic search of the literature and presents the findings in narrative summary form, meta-analysis involves pooling data from included studies and statistically analyzing the pooled data in search of trends or patterns. This was not a goal of the present study nor was it feasible given the heterogeneity of methods and measures across the included papers.

The Systematic Literature Review Process

The SLR process consists of the following steps adopted from Kitchenham & Charters (2007) and Dickson, Cherry, & Boland (2003). The steps can be divided into three phases: planning, implementation, and reporting.

The Planning Phase

Step one: Determining scope, identifying the review question, and writing the protocol. This step involves scoping the background literature to assess the need for a systematic literature review and identifying the specific focus of the study. This allows the researcher to refine the research question and identify the inclusion criteria for the primary studies to be involved in the SLR. Completing these tasks should provide the researcher with the insight necessary to develop the review protocol, which is a detailed plan that maps out the research process from start to finish.

The Implementation Phase

Step two: Searching the literature. During this stage, the researcher uses bibliographical databases and other sources to identify literature of potential relevance to the review question. The search process is conducted using predetermined sources based on research and scope searches. Librarians and other research experts are consulted when necessary. Sources primarily include electronic databases, where the reviewer uses a limited set of keywords to identify the

literature. Specific journals and non-electronic resources may also be referenced if necessary. This search process is documented in full to ensure transparency and replicability.

Step three: Screening titles, abstracts, and reference lists. This step involves reading the titles and abstracts of the literature identified in the previous step. The purpose of this is to eliminate any papers that are not relevant to the review question. This step also involves scanning the reference lists to identify more relevant references.

Step four: Obtaining papers. This step involves obtaining the full-text papers identified in the previously described screening process.

Step five: Selecting full-text papers. During this step, the inclusion criteria are applied to the full-text papers. All papers that do not meet the inclusion criteria or meet the exclusion criteria are discarded.

Step six: Assessing risk of bias. In this step, a quality assessment measurement tool, which includes factors to be evaluated for each paper, is developed and used to guide the quality assessment process. All full-text documents are evaluated for their methodological quality using these criteria.

Step seven: Extracting data. This step involves identifying the valuable and relevant information in each paper, recording it, and storing it in defined data extraction forms. Identifying relevant information involves pinpointing the sections of each paper that provide direct evidence of and/or answers to the review question.

Step eight: Synthesizing and analyzing data. Data synthesis involves collecting, organizing, and summarizing the relevant findings and evidence presented in the primary studies. The synthesized data is analyzed to provide an answer to the review question.

The Reporting Phase

Step nine: Writing up and editing. The final step in the systematic literature review process is the presentation of the review and its findings. These details include the theoretical background, methodology, results, discussion of the findings, and conclusions from the completed review.

The Review Protocol

The details in this section were applied to abovementioned steps in the present SLR. The review set out to answer the following review questions:

RQ1: To what extent do findings related to computer-mediated relational maintenance behaviors and relationship quality correspond with typologies derived from offline relational maintenance typologies?

RQ2: What overarching themes exist in current literature regarding the impacts of computer-mediated relational maintenance on the quality of nonplatonic relationships?

Evidence Gathering and Study Selection

Evidence Gathering. The evidence gathering approach involved two components:

Searching databases. In accordance with the SLR method, keywords were derived from the review questions. Then, for each keyword, the researcher referred to the literature in search of related words and synonyms. These were then compiled to create the search strings detailed in *Appendix A.* The databases in Table 1 below were then searched using the pre-determined strategy detailed in *Appendix A.*

Reference searches. Bibliographies of those papers that match the eligibility criteria were searched to identify any further, relevant references. These references were then subjected to the same screening process.

Table 1: Databases Searched

Subject	**Database**
Computer-Mediated Communication	*Communication Abstracts; Communication and Mass Media Complete; ACM Digital Library*
Interpersonal Relationships (Social Psychology)	*PsycINFO*
General Search	*ProQuest Research Library Plus; Web of Science*

Eligibility Criteria. The following eligibility criteria were used to screen the references and select the papers to be included in the final review:

Studies. All types of evaluative study designs were eligible for inclusion.

Participants. All types of participants were eligible for inclusion.

Outcome measures. All dimensions related to relationship quality were eligible for review, including (but not limited to): satisfaction, happiness, commitment, companionship (Fincham et al., 2010), or "some synonym reflective of the quality of the relationship" (p. 227).

Contexts and behaviors. Studies focusing on all types of computer-mediated behaviors used between nonplatonic partners were eligible for review, including (but not limited to): Facebook, Twitter, other social networking sites, texting, instant messaging, and email. Although the use of phone calls between couples is a longstanding practice and topic of research, it is nonetheless examined in the present review alongside other, less traditional forms of computer-mediated communication, such as instant messaging and social networking sites. Prior to more recent developments in CMC, the telephone was the only means of electronic, synchronous, non-FtF communication available, and also the most advanced in terms of media richness. Therefore, pre-CMC findings related to phone use and relational maintenance may be considered outdated

because the playing field is much different today; couples have many options to communicate with one another, phone included. Also, although they are more technologically advanced, newer forms of CMC provide variations/enhancements of telephonic affordances (synchronicity, sound/voice, non-FtF, electronic) to communication partners and serve similar purposes in couple communication. For these reasons, the use of phone calls between couples, when examined as a form of computer-mediated communication, is also eligible for consideration in the present review.

Study Quality Assessment

Ideally designed to assess the quality of randomized control trials, more typical measures of quality assessment could not be applied to the present review due to vast differences in study design and focus across the included papers. Therefore, the researcher used peer review as a measure of quality, including only peer-review papers in the study.

Data Extraction Strategy

For each primary study, the researcher identified valuable and relevant information by pinpointing which sections of the paper provided direct answers to the review question. All relevant text was highlighted electronically and exported to an electronic spreadsheet. Details of methods and results (e.g., study design, participant age range, scales, and outcomes) were also recorded. This was performed for each primary study included in the review.

Synthesis of Extracted Data

Popay et al. (2006) describe narrative synthesis as "a process of synthesis that can be used in systematic reviews focusing on a wide range of questions, not only those relating to the effectiveness of a particular intervention" (p. 5). This approach was deemed most suitable for the present review and was used to guide the presentation of findings. 'Narrative synthesis' refers to

an SLR approach where findings are summarized and explained primarily through the use of words and text to "tell the story of the findings from the included studies" (Popay et al., 2006, p. 5). As a broad measure of outcome, and to assist in the storytelling process, Buntin et al.'s (2011) outcome result classification framework was adopted and slightly adjusted to fit the context of the present study; as will be described below. Articles were classified based primarily on statistically significant differences in quantitative studies and author conclusions in qualitative studies.

Positive. Articles were classified as positive when the communication technology of interest was associated with improvement in one or more aspects of relationship quality, with no aspects worse off. Statistically significant differences, when available, were used to assess the outcome. Otherwise, findings were classified as positive if the authors discussed them as such.

Mixed-Positive. Articles were classified as mixed positive if they presented both positive and negative links between CMC and relationship quality, with the positive outcomes outweighing the negative. Mixed-positive articles included at least one negative outcome. Additionally, a positive conclusion by the authors was required for an article to be classified as mixed-positive.

Negative. Articles were classified as negative if their findings indicated negative impacts of CMC on aspects of relationship quality, with no aspects better off. Statistically significant differences, when available, were used to assess the outcome. Otherwise, findings were classified as negative if the authors discussed them as such.

Mixed-Negative. Articles earned a mixed-negative rating if they reported both negative and positive links between CMC and relationship quality, with the negative outcomes

outweighing the positive, and the authors generating negative conclusions. At least one positive outcome was required for articles to be classified as mixed-negative.

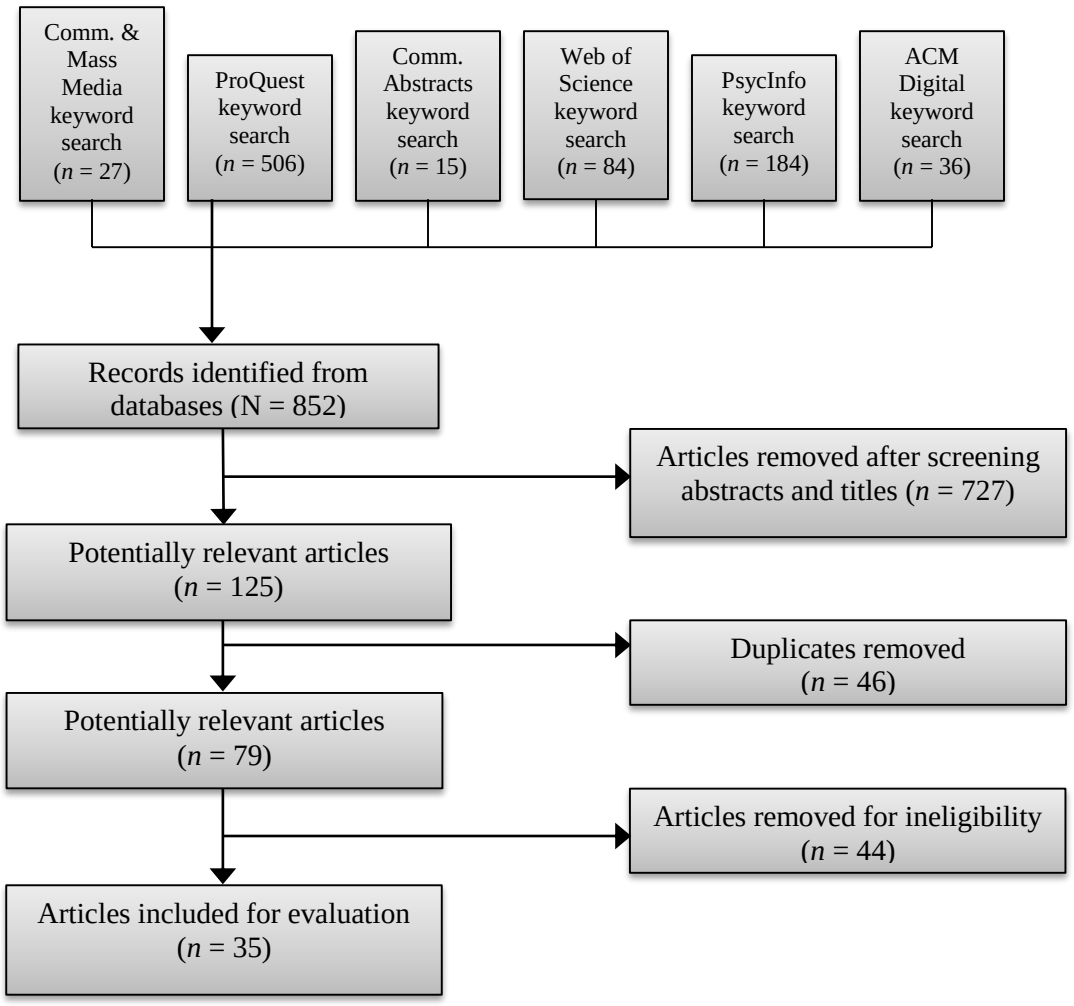
Neutral. Articles were classified as neutral if they did not demonstrate any relationship between usage of CMC between partners and aspects of relationship quality.

Results

Search Results

As shown in Figure 1, a total of 852 papers were identified through six database searches. Titles and abstracts of results from each database were screened to determine potential relevance, and 727 articles were removed. Of the remaining 125 papers, 46 duplicates were removed. Eligibility criteria were then applied to the remaining articles, and 44 papers were removed for ineligibility, mainly for failing to meet the *nonplatonic/romantic relationship* context criterion. A total of 35 papers were included for review.

Figure 1: Search Process



Description of the Evidence

Table 2 presents the distribution of articles by study design. Survey studies were most common (71.43%), followed by interview/focus group studies (14.29%), content analysis/diary studies (5.71%), cross-sectional studies (5.71%) and experimental design studies (2.86%).

Table 2: Article Count by Study Design

Study Design	**Number of Articles (%)**
Survey	27 (77.14)
Interview/Focus Group	5 (14.29)
Content Analysis/Diary	2 (5.71)
Experiment	1 (2.86)
Total	**35 (100.00)**

Table 3 presents the distribution of technology foci across the included papers. The use of social networking sites was examined in approximately one half of all papers (51.43%), followed by texting (34.29%), instant messaging (28.57%), phone (25.71%), email (17.14%), and video (8.57%). Seven papers (20%) did not specify any particular form of CMC. Approximately one third of the included papers examined more than one technology type; therefore, categories are not mutually exclusive.

Table 3: Article Count by Technology Type

Technology Type	**Number of Articles (%)**
Email	6 (17.14)
Instant Messaging	10 (28.57)
Phone	9 (25.71)

Table 3 (cont'd)

Social Networking Sites	18 (51.43)
Texting	12 (34.29)
Unspecified form of CMC	7 (20)
Video	3 (8.57)

Table 4 presents the distribution of articles by relationship type. Approximately one third of all papers (twelve; 34.28%) examined long distance relationships (LDRs), and one paper examined exclusively online couples (2.86%). Of the LDR papers included, eight papers (66.67%) compared LDRs with geographically close relationships (GCRs). The remaining twenty-one papers (62.86%) made no distinction regarding distance between partners.

Table 4: Article Count by Relationship Type

Relationship Type	**Number of Articles (%)**
Long Distance	12 (34.28)
Exclusively Online	1 (2.86)
Unspecified	22 (62.86)
Total	**35 (100)**

Table 5 summarizes the distribution of articles according to the outcomes measured in each paper. The majority of studies measured more than one outcome; therefore, categories are not mutually exclusive. Satisfaction was measured in twenty-nine papers (82.86%), followed by commitment in eight papers (22.86%), intimacy in six papers (17.14%), quality in three papers (8.57%), and stability in three papers (8.57%).

Table 5: Article Count by Outcome

Outcome	Number of Articles (%)
Commitment	8 (22.86)
Intimacy	6 (17.14%)
Quality	3 (8.57%)
Satisfaction	29 (82.86)
Stability	3 (8.57)

Age data was reported inconsistently across studies. Mean age of participants was reported in twenty-nine studies, and age range was reported in twenty-two studies (some of these studies overlapped and some were mutually exclusive). Only one study did not report mean age or age range of participants. Table 6 presents the distribution of articles by mean age of participants, where age groups were adopted from United States Census Bureau research (Howden & Meyer, 2011). A cross-tabulation of age data, including age ranges and mean values for all included papers, can be found in *Appendix B*. Approximately two-thirds (65.71%) of all studies involved participants with a mean age between 19 and 24.

Table 6: Article Count by Mean Age of Participants

Mean Age	Number of Articles
Between 18 and 24	23
Between 25 and 44	6
Total	**29**

Table 7 presents the distribution of articles by year of publication. The oldest included article was from 2004. Increases in the prevalence of CMRM research throughout the past decade are evident.

Table 7: Article Count by Year of Publication

Year	Number of Articles (%)
2004	1
2006	1
2007	2
2008	3
2009	1
2010	1
2011	4
2012	6
2013	8
2014	8
2015	2
Total	**35**

Narrative Summaries

The following sections present narrative syntheses of the SLR findings, using a storytelling approach to summarize and explain the findings from included studies and provide answers to the review questions.

Thematic Findings: Relationship Outcomes. As shown in Table 8, identifying outcome themes in the literature involved the assessment of several different variables. For each relationship outcome, the researcher tallied the number of title features (the outcome was mentioned in the paper's title), measures (the outcome was measured in the study), discussions (the outcome was discussed in the paper), and mentions (the outcome was mentioned in the paper) across all thirty-five papers. Outcome variables that received a count of zero for any of these criteria were deemed ineligible for thematic consideration and are not listed here.

Table 8: Outcome Variable Occurrences

Outcome	**Discussions** (%)	**Features** (%)	**Measures** (%)	**Mentions** (%)
Commitment	14 (40)	1 (2.88)	8 (22.88)	26 (74.29)
Idealization	4 (11.43)	1 (2.88)	3 (8.57)	6 (17.14)
Intimacy	9 (25.71)	5 (14.29)	6 (17.14)	19 (54.29)
Jealousy	8 (8.57)	3 (8.57)	3 (8.57)	15 (42.86)
Quality	23 (65.71)	4 (11.43)	3 (8.57)	27 (77.14)
Satisfaction	35 (100)	13 (37.14)	28 (80)	35 (100)

The most popular outcome measure was *satisfaction*. It was featured in the titles of thirteen (37.14%) papers, measured in twenty-eight (80%) papers, and discussed in all thirty-five papers. *Commitment* was another popular outcome measure, appearing in about three-quarters of all papers. Commitment was featured in the title of one (2.88%) paper, measured in eight (8.57%) papers discussed in fourteen (40%) papers, and mentioned in twenty-six (74.29%) papers. *Intimacy* was featured in the titles of five (14.29%) papers, measured in six (17.14%) papers, discussed in nine (25.71%) papers, and mentioned in nineteen (54.29%) papers.

Relationship quality was mentioned in the titles of four (11.43%) papers, measured in three (8.57%) papers, discussed in twenty-three (65.71%) papers, and mentioned in twenty-seven papers (77.14%).

The prevalence of the aforementioned measures in CMRM-related works is consistent with the attention they receive in the broad range of fields interested in interpersonal relationship research. Therefore, their thematic emergence here is not surprising. However, the present review identified two additional outcome themes that stand out as less 'standard' measures of relationship quality: *idealization* and *jealousy*. *Jealousy*, defined as "a complex of thoughts, feelings, and actions which follow threats to self-esteem and/or threats to the existence or quality of the relationship, when those threats are generated by the perception of a real or potential attraction between one's partners and a (perhaps imaginary) rival" (White, 1981, p. 24), was more prevalent; featured in the titles of three (8.57%) papers, measured in three (8.57%) papers, discussed in eight (42.86%) papers, and mentioned in fifteen (42.86%) papers. *Idealization*, the tendency to "describe a partner or relationship in overly positive terms" (Brody et al., 2013, p. 323), was featured in the title of one (2.88%) paper, measured in three (8.57%) papers, discussed in four (11.43%) papers, and mentioned in 6 (17.14%) papers. Because these two variables stretch the discussion of relationship outcomes beyond the typical foci of relationship quality (e.g., satisfaction, intimacy, commitment), their relative findings are discussed in greater detail below.

Jealousy. The discussion of jealousy varied across papers. Some authors argued that CMC introduces new opportunities for jealousy and subsequent romantic conflict (Fox et al., 2014; Utz & Beukeboom, 2011). For example, jealousy has been found to motivate other behaviors like partner surveillance (Billedo et al., 2015; Elpihnston & Noller, 2011) and

monitoring (Stewart et al., 2014), which have linked with negative and satisfaction-compromising (Elphinston & Noller, 2011) relationship outcomes such as perceived invasions of privacy (Fox et al., 2014). On the other hand, there are researchers that argue that online jealousy contributes positively to relational maintenance, particularly in long distance relationships. The idea here is that social networking sites offer long-distance partners "opportunities to experience relationship processes that might otherwise be absent or limited" (Billedo et al., 2015, p. 155), such as having access to and reacting to social information about one's partner.

Idealization. Consistent with CMC literature indicating that text-based, asynchronous environments increase idealized perceptions of partners (Walther, 1996), the included papers point to idealization as a noteworthy perceptual outcome associated with computer-mediated relational maintenances. The literature provides varying explanations for this, with some authors contending that it is the absence of face-to-face interactions, rather than the presence of computer-mediated interactions, that contributes to idealization (Brody, 2013; Stafford & Merolla, 2007). Other researchers have found support for the behavioral idealization mechanism, which suggests, "idealization is driven by over-interpretation of the selective self-presentation in restricted communication" (Crystal Jiang & Hancock, 2013, p. 572). Interestingly, in the context of video chat use between long distance romantic partners, Neustaedter & Greenberg (2012) found no support for the idealization-CMC links described in the literature. However, this does provide support for the idea that idealization increases in text-based, asynchronous environments, and suggests that even simulated face-to-face interactions can disrupt this partner idealization.

Thematic Findings: Relational Maintenance Behaviors. Across the thirty-five papers included for review, a vast variety of computer-mediated relationship maintenance strategies and behaviors were discussed, though not always explicitly. Behaviors that emerged in less than two

studies were deemed ineligible for thematic consideration and are not discussed here. Each eligible behavior was then assessed for its relevance to routine and strategic relational maintenance activities as they have been described in the literature. Stafford, Dainton, and Hass' (2000) revised relational maintenance typology, which consisted of seven RM strategies, was used to guide the classification of the behavioral strategies that emerged in the analysis of included papers. This typology consists of Stafford & Canary's (1991) original five strategies (positivity, openness, assurances, task sharing, and social networks) plus two additional strategies (advice and conflict management; Stafford et al., 2000). Findings from the included papers provided support for five of the Stafford et al. (2000) strategies only: positivity, openness, assurances, social networks, and conflict management. Findings did not provide support for the tasking sharing category or the advice category. An additional category, *surveillance,* emerged and its findings are also discussed. The six categories of relational maintenance behaviors that emerged in the present review are detailed in Table 9 below.

Table 9: Behavioral Category Findings

RM Behavior	**Occurrence (%)**	**Authors**	**Findings**
Positivity	5 (14.29)	Luo & Tuney (2014); Slatcher et al. (2008); Dainton (2013); Stewart et al. (2014); Sidelinger et al. (2009)	Positive text messages, the use of positive emotion-related words in instant messages, Facebook positivity, and positivity in online communication promote relationship satisfaction.

Table 9 (cont'd)

Openness	3 (8.57)	Dainton (2013); Stewart et al. (2014); Sidelinger et al. (2009)	Facebook openness not related to satisfaction, but openness in online communication promotes satisfaction.
Assurances	3 (8.57)	Dainton (2013); Stewart et al. (2014); Sidelinger et al. (2009)	Facebook assurances and assurances in online communication promote satisfaction.
Social Networks	7 (20)	Fox et al. (2014); Fox & Warber (2012); Papp et al. (2012); Steers et al. (2015); Saslow et al. (2012); Sidelinger et al. (2009); Utz & Beukeboom (2011)	The use of social networks as an RM strategy online promotes relationship satisfaction. Facebook helps couples with social integration but also poses privacy concerns. Public displays of affection promote relationship satisfaction.
Conflict Management	9 (25.71)	Coyne et al. (2011); Frisby & Westerman (2010); Morey et al. (2013); Perry & Werner-Wilson (2011); Schade et al. (2013); Scissors & Gergle (2013); Scissors et al. (2014); Sidelinger et al. (2009); Slatcher et al. (2008)	Use of CMC for conflict management promotes satisfaction, but email is associated with less satisfaction. CMC helps with conflict de-escalation, emotion management, idea construction, and reaching a solution. Preference for CMC use during conflict varies across couples. Message content holds varying implications.

Table 9 (cont'd)

Surveillance	7 (20)	Billedo et al. (2015); Dainton (2013); Elphinston & Noller (2011); Miller-Ott & Duran (2012); Papp et al. (2012); Stewart et al. (2014); Utz & Beukeboom (2011)	LDRs use more surveillance than proximal couples. Surveillance can lead to romantic conflict and dissatisfaction.

Positivity. Positivity, which involves "interacting with the partner in a cheerful, optimistic, and uncritical manner" (Canary & Stafford, 1992, p. 243), was discussed in five papers as an effective strategy for relationship maintenance. Luo and Tuney (2014) and Slatcher et al. (2008) examined message content between partners in text messages and instant messages, respectively. Luo and Tuney (2014) found that sending positive text messages to one's partner was positively associated with relationship satisfaction. Similarly, Slatcher et al. (2008) found that when expressed genuinely, use of positive words that express emotion in instant messages were positively associated with individual and partner satisfaction.

Additionally, in the context of social networking sites, both Dainton (2013) and Stewart et al. (2014) found that positivity, when enacted through Facebook, has positive impacts on relationship satisfaction. Sidelinger et al. (2009) found similar links in the broader context of CMC, where enacting positivity through online communication was found to boost relationship satisfaction.

Openness. Openness, which refers to "directly discussing the nature of the relationship and disclosing one's desires for the relationship" (Canary & Stafford, 1992, p. 243), was discussed in three papers where its use as an RM behavior was only partially supported. In the context of social networking sites, both Dainton (2013) and Stewart et al. (2014) found no links

between the enactment of openness via Facebook and relationship satisfaction. However, Stewart did find a significant positive relationship between Facebook openness and relationship certainty, and Sidelinger et al. (2009) found that openness via online communication is positively related to relationship satisfaction.

Assurances. Assurances, which involve "messages that stress one's continuation in the relationship" (Canary & Stafford, 1992, p. 243), were discussed in three papers. Both Dainton (2013) and Stewart et al. (2014) found that Facebook assurances positively predicted relationship satisfaction. Additionally, Stewart et al. (2014) found that Facebook assurances were positively related to relationship certainty. Furthermore, Sidelinger et al. (2009) found that online assurances positively predict relationship satisfaction and commitment.

Social Networks. The use of social networks, which involves "interacting with or relying on common affiliations and relatives" (Canary & Stafford, 1992, p. 244), was discussed in seven papers, six of which focused on social networking sites, and one of which examined the broader context of CMC, where Sidelinger et al. (2009) found that the use of social networks as an RM strategy online positively predicted relationship satisfaction. Because social networking sites give partners the ability to communicate openly with one another and with each other's social circles, it is not surprising that social networking sites were so popular in the discussion of this particular RMB category. In the more specific context of SNS, Fox et al. (2014) found that couples regard Facebook as a valuable tool for connecting with one another as well as with each other's affiliates on the site, which supports social integration. However, they also found that in online contexts, partners face difficulties in negotiating their relative use of social networking sites. Specifically, couples reported struggling to maintain independence and privacy due to the semi-public nature of SNS and the social integration that it fosters. Therefore, although couples

SNS facilitates social networks as an RMB, the sites are also associated with aversive outcomes in nonplatonic relationships.

The five remaining studies examined how public displays of affection (PDA) on Facebook relate to dimensions of relationship quality. Utz & Beukeboom (2011) looked at how public displays of affection through SNS relate to relationship quality, and found that partners are indeed happy about each other's use of SNS to express affection towards one another, and that for low self-esteem individuals, need for popularity was the main predictor of relationship happiness via PDA on Facebook. The remaining four studies specifically examined the particular role of partnered profile pictures and partnered relationship statuses. Papp et al. (2012) found that for both males and females displaying a partnered relationship status on Facebook was associated with higher levels of partner and individual relationship satisfaction. Additionally, they found that for women only, disagreements over Facebook relationship statuses were associated with significantly less relationship satisfaction.

Similarly, Steers et al. (2015) found a positive relationship between relationship quality and a partnered relationship status, and Saslow et al. (2012) found that displaying a dyadic profile picture positively predicted relationship satisfaction and closeness. Saslow et al. (2012) also found that partners were more likely to post relationship-relevant information on Facebook on days where they reported feeling more satisfied in their relationship. However, Fox & Warber (2012) suggest that men and women differ in their perceptions of what it means to be "Facebook official," with only women believing that a partnered relationship status indicated exclusivity and seriousness. The authors suggest that such disparities in partner perceptions, particularly regarding the progression of a shared relationship, can lead to relationship dissatisfaction.

Therefore, SNS is a valuable tool in helping partners integrate their social networks for relational maintenance, but can also be a cause of friction between partners.

Conflict Management. Stafford et al.'s (2000) typology identified, but did not define, conflict management as a strategy of relationship maintenance. Therefore, all included papers that assessed the use of CMC between couples in the context of conflict or problem solving are discussed here. This category received the most popularity, with nine papers examining dimensions of conflict management through CMC. Sidelinger et al. (2009) found that in the broad context of online communication, using CMC for conflict management positively predicted relationship satisfaction. Additionally, Scissors & Gergle (2013) found that CMC assists partners in conflict de-escalation, management of emotions, and reaching a solution. Similarly, Perry & Werner-Wilson (2011) found that CMC assists in problem solving by giving partners more time for idea construction and conflict de-escalation. Nonetheless, Morey et al. (2013) found that the use of email for couple communication was associated with higher levels of couple conflict.

Both Perry et al. (2011) and Frisby & Westerman (2010) found that channel choice during couple conflict has no impact on relationship satisfaction, suggesting that CMC provides an equally effective problem-solving environment. However, the literature does suggest that preferences for CMC use during conflict vary across couples. Scissors et al. (2014) found that partners who were less satisfied in their relationships preferred to communicate through CMC during conflict, as opposed to communicating face-to-face. Furthermore, Frisby & Westerman (2010) found that individuals with dominating conflict styles preferred using CMC for conflict management.

Other studies focused on CMC message content and medium during conflict. Slatcher et al. (2008) found that men's use of positive sarcasm (e.g., "oh great") and women's use of negative sarcasm (e.g., "oh yeah that must have been so terrible") were associated with less individual satisfaction, partner satisfaction, and less relationship stability. Furthermore, Coyne et al. (2011) and Schade et al. (2013) both found that texting to hurt one's partner negatively predicted relationship satisfaction. Schade et al. (2013) also found that it negatively predicted partner attachment and relationship stability.

Surveillance. Surveillance, which Canary et al. (1993) defined as online monitoring behavior, emerged as a category of relational maintenance strategies in the analysis of included papers. Although this category was not included as a strategic and routine relationship maintenance behavior in either of the Stafford et al. (1991; 2000) typologies, surveillance and monitoring have received research attention as RMBs unique to and prominent in the context of social networking sites (e.g., Bryant & Marmo, 2009). Surveillance in this context refers to the act of monitoring a romantic partner's behavior on public media platforms such as social networking sites (e.g., frequently visiting a partner's profile page on Facebook). In the present review, six of the seven papers discussing surveillance-related behaviors examined them in the Facebook context, lending support to the prevalence of SNS as a platform for partner monitoring behaviors.

Utz & Beukeboom (2011) found that online partner monitoring is more common and socially acceptable than offline partner monitoring. In line with Fox et al.'s (2014) finding that couples struggle to maintain independence and privacy from their partners on Facebook, which often leads to romantic conflict, Miller-Ott & Duran (2012) found that being able to control a romantic partner's *physical* monitoring of online behavior (e.g., reading a partner's online

messages through his or her cellular device) was positively associated with relationship satisfaction. More specifically, they found that couples that shared dyadic rules regarding physical online monitoring were more satisfied in their relationships (Miller-Ott & Duran, 2012).

Surveillance and monitoring are frequently discussed alongside romantic jealousy. For instance, Utz & Beukeboom (2011) found that more SNS monitoring positively predicted SNS jealousy. Similarly, Stewart et al. (2014) found that partners used more Facebook monitoring behaviors when they experienced jealousy, as well as when they experienced uncertainty in their relationships. Additionally, Elphinston & Noller (2011) found that surveillance behaviors and jealous cognitions, which are more common in individuals who score high on Facebook intrusion, a construct "characterized by an excessive attachment to Facebook, which interferes with day-to-day activities and with relationship functioning" (Elphinston et al., 2011, p. 631) predicted relationship dissatisfaction. This could hold negative implications especially in long-distance relationships, where partners use social networking sites for partner surveillance more often than proximal couples and also experience more jealousy (Billedo et al., 2015).

Narrative Summary by Outcome Result and Relationship Type. As a broad measure of outcome, the outcome result classification framework (Positive, Mixed-Positive, Neutral, Negative) originally employed by Buntin et al. (2011) was adopted and slightly altered to fit the context of the present study. Articles were classified primarily based on statistically significant differences when quantitative evidence was available, and based on author conclusions in qualitative papers.

Of the thirty-five papers included for review, over one-third (37.14%) of all findings indicated positive links between the use of CMC in nonplatonic relationships and relationship quality, and over one quarter (28.57%) of all papers indicated mixed-positive links. Combined,

these two outcome categories account for almost two thirds (65.71%) of all included papers, indicating that the majority of relevant research points to more positive links between CMC and nonplatonic relationship quality. Of the remaining twelve papers, five were classified as negative (14.29%), five as mixed-negative (14.29%), and two as neutral (5.71%). These outcome classifications have been used to guide the synthesis and presentation of findings. The remainder of this section provides narrative summaries of the results, organized by relationship type (LDR, exclusively online, and unspecified). Within each relationship type, the results are organized by outcome classification (positive, mixed-positive, negative, mixed-negative, neutral).

Exclusively Online Relationships (EORs). The researcher identified only one study that examined links between quality in exclusively-online relationships and the use of CMC between partners.

*Positive EOR findings***.** The one study that examined exclusively online romantic relationships revealed positive effects of CMC on relationship quality:

> Anderson & Emmers-Sommer (2006) examined couples that interact exclusively online. The authors found that partners who experienced intimacy, trust, and communication satisfaction in their online interactions were more satisfied with their relationships. Additionally, they found that the amount of communication time between partners accounted for significant positive differences in perceptions of commitment, intimacy, trust, attributional confidence, and relationship satisfaction.

Long-Distance Relationships (LDRs). The researcher identified twelve studies that assessed CMC use and aspects of relationship quality in long-distance relationships. Nine of the studies reported positive (6) or mixed-positive (3) results, two reported negative results, and one

study reported neutral effects on relationship quality. The distribution of outcome classifications in LDR studies is detailed in Table 10.

Table 10: LDR Outcome Classification

Outcome (%)	**Author(s)**	**Year**	**Design**	**N**	**Platform**
Positive LDRs (50%)	Brody	2013	Survey	592	CMC
	Dainton	2013	Survey	189	SNS
	Emmers-Sommer	2004	Survey	342	Phone
	Jiang, Hancock	2013	Diary	126	Phone, IM, Texting, Email, Video
	Sidelinger et al.	2009	Survey	123	CMC
	Vitak	2014	Survey	415	SNS
Mixed-Positive LDRs (33.33%)	Billedo et al.	2015	Survey	272	SNS
	Neustaedter, Greenberg	2012	Interview	14	Video
	Stewart et al.	2014	Survey	281	SNS
Negative LDRs (20%)	Elphinston, Noller	2011	Survey	342	SNS
	Hand et al.	2012	Survey	253	SNS
Neutral LDRs (8.33%)	Stafford, Merolla	2007	Survey	400	Phone, Email, Chat

Positive LDR findings. Of the six papers classified as positive, three papers examined the general use of computer-mediated communication:

Brody (2013) found that a high frequency of mediated communication and high length of time between face-to-face interactions between partners interact to increase both satisfaction and commitment in partners. Increased mediated communication was found to have a stronger impact on satisfaction than on commitment. Additionally, this study found that these effects are only apparent in the absence of face-to-face encounters;

partners who saw each other more frequently did not exhibit an increase in satisfaction or commitment with increased mediated communication.

Crystal Jiang & Hancock (2013) tested the effects of long-distance relationship status and communication media on the intimacy process in an interaction-by-interaction diary study. The researchers found that interpersonal media can affect the strength of behavioral adaptations (strategically adapting self-disclosing behaviors to the partner's responsiveness) and idealization in long-distance relationships, both of which showed a significant, positive correlation with relationship intimacy.

Sidelinger et al. (2009) used Stafford, Dainton, and Haas' (2000) typology of routine and strategic relational maintenance strategies to measure participants' relational maintenance behaviors online. They found significant relationships between relationship satisfaction and all seven relational maintenance factors (positivity, assurances, network, task sharing, advice sharing, and conflict management). They found no difference in relationship satisfaction between long distance and geographically close couples. They also found that assurances were positively associated with commitment in romantic relationships.

Two papers focused specifically on Facebook:

Dainton (2013) measured the used of positivity, assurances, and openness via Facebook, and found that the use of Facebook positivity was positively associated with relationship satisfaction, the use of Facebook assurances was only slightly associated with relationship satisfaction, and the use of Facebook showed no associated with relationship satisfaction.

Vitak (2014) used an online survey to assess the significance of Facebook as a tool for relational maintenance and found that long-distance partners and partners who rely on the site as their primary form of communication enact more relationship maintenance behaviors via the site. They also found that these individuals were more likely to regard the site as having a positive impact on their relationship quality.

And one paper focused on voice calls:

Emmers-Sommer (2004) found that lengthy, face-to-face encounters were most associated with relationship satisfaction, in comparison with short face-to-face interactions, short phone interactions, and long phone interactions. They also found that communication quality in all modes was related to relationship satisfaction, with couples deriving more satisfaction from conversations that are smooth, relaxed, and free of communication breakdown and conflict.

*Mixed-Positive LDR findings***.** Of the three LDR papers classified as mixed-positive, two papers examined social networking sites:

Billedo et al. (2015) conducted a survey study where they compared SNS use for relational maintenance in long distance romantic relationships (LDRR) and geographically close romantic relationships. Results revealed that LDRR partners use Facebook more intensely and are more likely to use the site for relational maintenance behaviors. More importantly, the study also found that LDRR partners were more likely to use the site for surveillance, and experienced higher levels of SNS jealousy, both of which contribute positively to relational maintenance in LDRRs.

Stewart et al. (2014) used an online survey to find links between the relational maintenance behaviors enacted on Facebook and relationship satisfaction, uncertainty,

and Facebook jealousy. Facebook positivity and Facebook assurances were both positively related to relationship satisfaction, but none of the remaining behaviors (Facebook jealousy, Facebook monitoring, or Facebook openness) were found to have any effect. The authors found that partners are more likely to use FB monitoring when they experiences lower levels of relational uncertainty, are more likely to use FB assurances and FB openness when they experience higher levels of relationship certainty, and are more likely to use FB positivity, FB openness, FB assurances, and FB monitoring when experiencing higher levels of FB jealousy.

And one study examined the use of video:

Neustaedter & Greenberg (2012) conducted an interview study where they found that in allowing LDR couples to experience shared presence, video chat boosts intimacy and provides stronger feelings of connectedness between partners. However, they also found that couples struggle with the medium on contextual, technical, and personal levels (e.g., conflicting time zones, network quality, and lack of physical intimacy).

Negative LDR findings. Of the two LDR papers with negative outcomes, both studies examined the use of social networking sites for relationship maintenance:

Elphinston & Noller (2011) examined Facebook intrusion and jealousy for their impacts on romantic relationships, and found that when Facebook intrusion elicits surveillance behaviors and cognitive/romantic jealousy, couples experiences less satisfaction in their relationships.

Hand, Thomas, & Buboltz (2012) found no links between individual's usage of online social networks and relationship satisfaction and perceived intimacy. However,

they did find a negative correlation between a partner's usage of online social networks and individual perceptions of relationship satisfaction and intimacy.

*Neutral LDR findings***.** One LDR study was classified as neutral:

> Stafford & Merolla (2007) measured three modes of mediated communication (phone, email, chat). The study explored how the frequency of FtF and nonFtF modes of communication effect stability and idealization in long distance and geographically close dating relationships. They found that none of the nonFtF communication modes significantly predicted idealistic distortion, romantic love, reminiscent thinking, perceived agreement, or communication quality. However, the absence of FtF contact did significantly predict higher levels of all five variables.

Unspecified Relationship Type (URT). The researcher identified twenty-two studies that examined links between CMC use and aspects of relationship quality in romantic relationships of unspecified geographic circumstances. In other words, twenty of the included studies did not restrict participant eligibility to any specific relationship type (e.g., long-distance, proximal, exclusively online). As detailed below in Table 11, thirteen of the studies reported positive (7) or mixed-positive (6) results, and eight of the studies reported negative (3) or mixed-negative (5) results.

Table 11: URT Outcome Classification

Outcome	Author(s)	Year	Design	N	Platform
Positive URTs	Luo, Tuney	2014	Experiment	441	Texting
	Miller-Ott, Duran	2012	Survey	227	Phone, Texting
	Parker et al.	2013	Survey	86	Texting
	Perry, Werner-Wilson	2011	Focus Group, Interview	94	CMC

Table 11 (cont'd)

Positive URTs	Saslow et al.	2012	Cross-sectional, Longitudinal, Diary	216	SNS
	Scissors, Gergle	2013	Interview	24	
	Steers et al.	2015	Survey	188	SNS
Mixed-Positive URTs	Coyne et al.	2011	Survey	1039	CMC
	Frisby, Westerman	2010	Survey	129	CMC
	McGee	2014	Survey	298	IM, Texting, Email
	Morey et al.	2013	Survey	280	Email, Phone, SNS, Texting
	Papp et al.	2012	Survey	118	SNS
	Utz, Beukeboom	2011	Survey	194	SNS
Negative URTs	Fox, Warber	2012	Survey	403	SNS
	Luo	2014	Survey	395	Texting
	Scissors, Roloff, Gergle	2014	Interview	24	IM, Texting, Email
Mixed-Negative URTs	Brown, College	2008	Interview	15	SNS, IM, Email
	Coccia, Darling	2014	Survey	534	Texting, SNS, Phone
	Fox et al.	2014	Focus Group	47	SNS
	Schade et al.	2013	Survey	276	Texting
	Slatcher et al.	2008	Content Analysis	68	IM
Neutral URT	Baym et al.	2007	Survey	496	CMC

*Positive URT findings***.** Of the seven papers classified as positive, two papers examined the use of texting:

Luo & Tuney (2014) conducted a controlled experiment to test the effects of sending positive text messages to one's partner on relationship satisfaction. They found that sending daily positive text messages to one's partner had a significant positive

impact on relationship satisfaction. However, their further analysis revealed that it was the act of initiating texting with one's partner on a daily basis, rather than the content of the text messages, that was responsible for this effect.

Parker et al. (2013) examined the effects of texting on relationship satisfaction and found that couples that reported texting also reported being more satisfied in their relationships.

Two studies focused on social networking sites:

Saslow, Muise, Impett, Dubin (2012) examined links between dyadic profile pictures and relationship satisfaction and closeness, and found that displaying a dyadic profile picture was significantly positively correlated with reported feelings of relationship satisfaction and relationship closeness. They also found that romantically involved individuals are more likely to post relationship-relevant information on their Facebook pages on days where they report being more satisfied with their relationships.

Steers, Overup, Brunson, Acitelli (2015) examined how relationship awareness on Facebook (e.g., displaying a "partnered" relationship status, status updates, and/or photos) and relational authenticity (the "genuine, unadultered expression of oneself in the context of a romantic relationship," p. 5) predict relationship quality. They found that individuals reporting high relationship authenticity were more likely to report higher levels of relationship quality, and that this relationship is mediated by relationship awareness on Facebook.

One study examined mixed modes of CMC (phone, text):

Miller-Ott & Duran (2012) found that partners perceive cell phones as playing a very important role in their communication with each other, and that satisfaction with cell

phone usage in one's relationship is a strong predictor of relationship satisfaction. They also found that having dyadic cell phone rules regarding Relational Issues (bringing up relational issues via text) and regarding Contact With Others (texting/calling others during together-time) were both positively correlated with cell phone satisfaction. They also found that relationship satisfaction was most strongly predicted by rules regarding relational issues, monitoring partner usage (checking each other's phone logs and/or text messages), and repetitive contact (do not keep calling/texting when the partner does not respond).

And two studies examined the general use of CMC:

Perry & Werner-Wilson (2011) used a focus group and interview study to explore links between the use of CMC for problem solving and satisfaction in relationships, and found no differences in satisfaction between those who used CMC versus those who communicated face-to-face for problem solving purposes. Furthermore, they found that CMC assists in problem solving by allowing couples more time for idea construction and conflict de-escalation.

Scissors & Gergle (2013) conducted interviews to explore patterns of channel switching from face-to-face to mediated communication (and back) between romantic partners during conflict. Participants indicated that they used IM, texting, email, phone, SNS and video during conflict. They also indicated that their strongest motivations for switching to mediated communication included conflict de-escalation, emotion management, and the desire to reach a resolution; pointing to CMC as a valuable conflict resolution tool in romantic relationships.

Mixed-Positive URT findings. Of the six studies revealing mixed-positive links between CMC use and romantic relationship quality, three studies examined mixed modes of CMC:

Coyne et al. (2011) found that romantic partners used media to communicate for three primary purposes: to express affection, to discuss serious issues, and for apologizing. The authors also found that cell phones and texting were used most frequently for partner communication, with contact through email, social networking sites, and instant message occurring less frequently. They additionally found that expressing affection through texting was associated with positive forms of communication, which are positively correlated with relationship satisfaction. On the contrary, texting to hurt one's partner was and to broach confrontational subjects were both associated with negative forms of communication and thereby less relationship satisfaction.

McGee (2014) examined the frequency of CMC (text, email, IM) usage between partners for its impacts on intimacy and relationship satisfaction, and only found a significant positive correlation between moderate email exchange between partners and relationship satisfaction. They also investigated the frequency of CMC usage on sexual satisfaction and found no significant relationship.

Morey, Gentzler, & Creasy, 2013). The study examined the use of electronic communication (email, SNS, and texting) in the context of relationship satisfaction while accounting for the role of individual attachment style. They found that overall, participants who reported more frequent communication with their partners across channels also perceived their relationships more positively. However, none of the communication channels were found to significantly predict relationship quality. Texting was only related to positive relationship qualities for highly avoidant individuals, and

email was linked with more conflict in highly avoidant individuals. Additionally, SNS use was linked with perceived intimacy and support for individuals with high attachment anxiety only.

Two studies examined the use of social networking sites:

Utz & Beukeboom (2011) examined the role of social networking sites and self-esteem in predicting both relationship jealousy and relationship happiness. They found that frequency of login and grooming (viewing friends' profiles and/or posting publicly on friends' pages) both positively predicted SNS relationship happiness, which the authors also found to be positively correlated with relationship satisfaction. Results also revealed that for low self-esteem individuals, need for popularity was the strongest predictor of both SNS relationship jealousy and happiness, while SNS grooming was the main predictor of both jealousy and happiness for high self-esteem individuals.

Papp, Danielewicz, & Cayemberg 2012) examined Facebook profile choices (e.g., displaying partnered relationship status, displaying partnered profile picture) for their associations with relationship satisfaction, and found that males displaying a partnered status was linked with higher relationship satisfaction and partner relationship satisfaction (to a lesser extent), and females displaying a partnered profile photo was strongly linked with both individual and partner relationship satisfaction. Disagreements over Facebook relationship statuses were linked with relationship dissatisfaction for women only.

One study examined general use of CMC:

Frisby & Westerman (2010) found that communication channel choice during romantic conflict had no impact on relationship satisfaction. Instead, it was the individual's conflict style that influenced relationship satisfaction, with integrating and

obliging styles leading to the most relationship satisfaction. They also found that people with dominating conflict styles prefer to communicate via CMC in times of conflict with a romantic partner.

*Negative URT findings***.** Of the three studies revealing negative effects, one study examined the use of social networking sites:

> Fox & Warber (2012) found that men and women vary in the ways that they perceive and interpret a "Facebook official" relationship status, with women more strongly reporting to believe that the status is an indication of relationship exclusivity and seriousness. The research point to this disparity as a viable cause for relationship dissatisfaction because couples might often not be on the same page regarding the development and progression of their shared relationship.

One study examined the use of texting:

> Luo (2014) found that texting share in overall partner communications showed negative links with relationship satisfaction, such that when a greater share of overall communications with one's partner takes place through texting, the couple experiences less relationship satisfaction. They also found that sheer texting volume accounted for minimal variation in relationship satisfaction.

And one study examined mixed modes of CMC:

> Scissors Roloff, & Gergle (2014) examined CMC and self-esteem in the context of romantic conflict and communication preferences and found that relationship satisfaction showed a significant positive correlation with face-to-face avoidance and a negative correlation with CMC preference. When individuals reported lower levels of relationship satisfaction, they were more likely to avoid face-to-face communication and

favor CMC, while individuals reporting higher satisfaction were more likely to prefer face-to-face communication for conflict management.

*Mixed-Negative URT findings***.** Of the five studies classified as mixed-negative, two studies examined mixed modes of CMC:

Brown & College (2008) measured the use of SNS, IM, and email. The researchers conducted an interview study where interviewees reported that Internet communication tools have no effect on the quality of their romantic relationships. However, the authors note that although participants' reported quality did not explicitly indicate an effect, interviewees frequently cited negative aspects associated with the affordances of Internet communication, such as the dilemma of being too accessible to one's partner. Nonetheless, the amount of time spent interacting with one's partner online was associated with better relationship quality and more relationship satisfaction.

Coccia & Darling (2014) measured the use of text, SNS, and voice calls. The researchers examined the relationships between social interactions, personal behaviors, and satisfaction in college students, and found that those involved in romantic relationships that talk on the phone more often are most satisfied. They also found that those who engaged in nonverbal forms of communication more frequently, such as texting and social networking, were less satisfied.

One study examined social networking sites:

Fox, Osborn & Warber (2014) conducted a focus group study to examine Facebook in the context of romantic relationships, and found that partners used Facebook most commonly to connect with one another and with each other's social networks, thus supporting social integration. They also found that because of the affordances offered by

social networking sites, such as the semi-public nature of SNS activity, some individuals struggle to maintain privacy and independence in their relationships, which often results in romantic conflict.

One study examined texting:

Schade et al., 2013) examined texting behavior in romantic relationships while accounting for variations in reported partner attachment. They found that male texting frequency negatively predicted both satisfaction and stability, and female texting frequency was positively associated with stability only. Texting specifically to express affection was more frequent in individuals reporting higher levels of partner attachment. Texting to hurt one's partner was associated with lower levels of satisfaction, attachment, and stability in males only.

And one study examined instant messaging:

Slatcher, Vazire, & Rennebaker (2008) conducted a content analysis study examining daily instant messages between partners for links between word use and relationship quality and stability. The authors found that for men, genuinely expressed positive emotion-related words were associated with higher levels of individual and partner relationship satisfaction. For women, use of the pronoun "I" was associated with higher levels of partner and individual relationship satisfaction and more relationship stability. Men's use of the pronoun "me" was negatively correlated with partner relationship satisfaction, and men's use of the pronoun "you" was negatively related to individual satisfaction. Men's positive emotion-related words and women's negative emotion-related words, when used sarcastically, were found to negatively predict individual and partner satisfaction as well as relationship stability.

Neutral URT. The one URT study with neutral findings examined Internet versus face-to-face communication:

> Baym et al. (2007) examined the association between relationship quality and the extent to which a medium (face-to-face, Internet communication) is used to communicate with one's romantic partner. Controlling for relationship type and sex/partner sex, the researchers found no significant correlation between medium use and relationship quality.

Summary of Results

With regards to the first review question, which asked about the extent to which offline relational maintenance typologies replicate in online contexts, mixed results were found. Some behaviors were found to be exclusive to offline relational maintenance, some behaviors were found to be exclusive to online relational maintenance, and some behaviors were found to be common between the two contexts. Specifically, *task sharing* and *advice* stood out as effective RMBs only in the context of offline maintenance, while surveillance emerged as a CMC-exclusive RMB. The remaining behavioral categories, *positivity, openness, assurances, social networks,* and *conflict management* were found to be effective RMBs, contributing positively to relationship quality in both offline and online contexts.

The second review question asked what outcomes, or dimensions of relationship quality, are associated with the use of computer-mediated relational maintenance between romantic partners. Findings from included papers in the present review revealed that in addition to traditional measures of quality, such as *satisfaction, commitment*, and *intimacy*, two more variables, *jealousy* and *idealization*, are noteworthy relationship outcomes in the context of CMRM.

Discussion

The present review aimed to identify themes in current literature regarding the impacts of computer-mediated relational maintenance behaviors on quality in nonplatonic relationships. More specifically, it aimed to synthesize existing research, pinpoint the behaviors that impact relationship quality, explore other potential relationship outcomes of CMRM, and recommend directions for future research. Findings are discussed in the context of relational maintenance behaviors, relationship outcomes, and outcome classifications.

Summary of Findings

Relational Maintenance Behaviors. While some authors suggest that online relational maintenance should be examined independently and without the categorical constraints of existing typologies for offline maintenance (e.g., Tidwell & Walther, 2002; Tong & Walther, in press), others have frequently used offline RM typologies to guide investigation in the CMC context (e.g., Houser et al., 2012; Rabby, 2007; Wright, 2004). With the goal of informing this debate and future research directions, the present study aimed to assess the extent to which offline typologies translate in computer-mediated environments. Behavioral findings from the included papers fell into six relational maintenance categories: positivity, assurances, social networks, conflict management, surveillance, and openness. Openness received the least support in the literature, with no support found for the use of openness as a RMB in the SNS context. Nonetheless, it was associated with positive outcomes in the more general context of CMC use. The use of assurances, which received support in both SNS and general-CMC contexts, was only moderately supported across the findings of included papers.

The use of positivity, conflict management, social networks, and surveillance were all strongly supported in the review. Positivity was associated with favorable relationship outcomes

in several contexts. Positive text messages, Facebook positivity, positivity in online communication, and positive emotion-related words in instant messages were all found to promote relationship satisfaction. This emphasis on message content was echoed in the discussion of conflict management as a RMB, where sending sarcastic messages and texting to hurt one's partner in times of conflict were both found to negatively predict relationship satisfaction. Overall, and with the exception of email use, the use of CMC for conflict management has been found to promote satisfaction in relationships. It was particularly found to help with conflict de-escalation, idea construction, reaching a solution, and the management of emotions. Nonetheless, preference for CMC use during conflict varies across couples.

The use of social networks as a RM strategy online was also found to promote relationship satisfaction. The majority of findings in this category related to public displays of affection (e.g., displaying a partnered profile picture or relationship status), which were found to positively promote relationship satisfaction, closeness, and happiness. However, findings suggest that although social networking sites facilitate *social networks* as a relational maintenance strategy, the social information accessible through these sites might be excessive and thereby problematic for relationships, as couples reported struggling to maintain privacy and independence on social media. Findings also suggest that in providing a more 'socially acceptable' way to monitor partner behavior, the existence of social networking sites have promoted surveillance, the final category of RMBs that emerged in the review.

Partner surveillance was supported as a theme of CMRMBs, particularly in the context of social networks, with varying impacts on relationship quality. Partners are more satisfied when they are able to limit each other's surveillance behaviors, suggesting that partner surveillance jeopardizes individual satisfaction in relationships. However, in the context of long-distance

relationships, where partner surveillance was found to be more prevalent, implications vary. Authors suggest that surveillance, and the jealousy it evokes, can positively contribute to relationship maintenance by giving couples social opportunities that are otherwise absent.

Relationship Outcomes. The review aimed to pinpoint the relationship outcomes associated with CMRM. Consistent with interpersonal relationship research as a broad field of academic inquiry, satisfaction, commitment, intimacy, and quality were most popular as measures of relationship quality in the included papers. In addition to these standard measures, jealousy and idealization emerged as noteworthy relationship outcomes in the discussion of CMRM.

Jealousy was examined predominantly in the context of social networking sites, where it was discussed as both a positive and a negative outcome with variations across different relationship contexts. In long distance relationships, some authors found jealousy to positively influence relationship maintenance. As Billedo et al. (2015) explain, jealousy "arouses a sense of protectiveness over the relationship, motivating one to act in a manner that affirms love for the other" (p. 155). Considering LDR partners' limited access to social, and sometimes jealousy-evoking, information about one another, social networking sites give these partners opportunities to experience relationship processes that are otherwise unavailable to them.

However, in proximate relationships, jealousy is often perceived differently. Findings revealed that Facebook is often criticized in the context of romantic relationships, where partners struggle to manage their SNS activity in light of the problems it creates, such as jealousy and partner surveillance. Studies also found that addictive behaviors, such as the compulsive use of Facebook, are most detrimental to relationship satisfaction when they lead to romantic jealousy through excessive partner surveillance. Therefore, it is evident that the literature has not reached

a consensus regarding the implications of jealousy in the context of CMRM. While mixed results are not surprising due to variations in relationship type, findings within each type are still inconsistent. Therefore, it is possible that individual differences, such as self-esteem, or relationship-specific differences, such as uncertainty or even infidelity, could be responsible for variations in the perceived implications of CMC jealousy. Future research should aim to consider these and other potential moderators for a more accurate understanding of CMC jealousy.

Idealization was examined only in the context of LDRs, and was found to contribute positively to satisfaction and intimacy. However, excessive idealization during times of geographic separation in LDRs negatively predicted relationship stability upon reunion. In either case, and consistent with CMC literature indicating that text-based, asynchronous environments increase idealized perceptions of partners (Walther, 1996), the present review identified idealization as a noteworthy perceptual outcome associated with CMRM. The literature provides varying explanations for this, with some authors contending that it is the absence of face-to-face interactions, rather than the presence of computer-mediated interactions, that contributes to idealization (Brody, 2013; Stafford & Merolla, 2007). Other researchers have found support for the behavioral idealization mechanism, which suggests, "idealization is driven by over-interpretation of the selective self-presentation in restricted communication" (Crystal Jiang & Hancock, 2013, p. 572). Interestingly, in the context of video chat use between long distance romantic partners, Neustaedter & Greenberg (2012) found no support for the idealization-CMC links described in the literature. However, this does provide support for the idea that idealization increases in text-based, asynchronous environments, and suggests that even simulated face-to-face interactions can disrupt this partner idealization.

Outcome Classifications. The use of CMC between partners is associated with both negative and positive relationship outcomes. Overall, the majority of findings indicated positive (or mixed-positive) rather than negative (or mixed-negative) links between the use of CMC and relationship quality, and most CMC platforms were found to assist with relational maintenance. Social networking sites, phone calls, video, texting, and email were linked with more positive than negative outcomes, thus considered to be beneficial for RM. Only the use of instant messaging between couples was associated with more negative than positive outcomes.

Interestingly, all studies that did not specify any type of CMC platform (e.g., texting, SNS, IM), using the broader umbrella term "computer-mediated communication" to describe their focus, were associated with positive results, with no negative links found between the unspecified use of CMC and relationship quality. This suggests that examining subsets of CMC behavior, rather than CMC as a whole, may allow researchers to achieve a more nuanced understanding of CMRM and its impacts on relationship quality. Participants might perceive CMC as being generally beneficial for RM, but prompting them with more specific CMC scenarios might help researchers tap into more intricate and potentially more accurate details that may indicate otherwise. Therefore, future research in the field should specify a platform of interest rather than group all CMC behavior into one large category, as this approach likely causes researchers to miss out on potentially telling data.

Distance between partners was also found to account for outcome variations. Positive outcomes were particularly popular in the study of long-distance relationships, with three-quarters of all LDR studies indicating positive links between the use of CMC and relationship quality. This suggests that LDR partners are able to effectively "mitigate the effects of the geotemporal divide using CMC" (Tong & Walther, in press). Outcomes in proximal relationships

were also predominantly positive (two-thirds), albeit with less drastic proportion. This supports the continuing distinction between long-distance and proximate relationships in the study of relational maintenance via CMC, as it suggests that CMC indeed has varying impacts on relationship quality across different relational contexts.

Other Themes. Several other noteworthy themes surfaced in the present review. Long distance relationships and social networking sites emerged as the two most common contexts of inquiry in CMRMB research. It is likely that the popularity of LDRs in CMRM research stems from the idea that many people rely on CMC in the absence of face-to-face contact (Stafford, 2005). In the present review, Vitak (2014) and Billedo et al. (2015) both found strong support for this idea, particularly in the context of SNS, where both studies found that LDR partners conduct more relational maintenance through Facebook than proximal partners. These findings, combined with the high prevalence of positive outcomes in CMC/LDR research, shed light upon the value of CMC as a relational maintenance tool in LDRs.

The popularity of studies examining social networking sites also suggests that this particular form of CMC holds important implications in the context of CMRM. Partner surveillance, jealousy, and public displays of affection were the main foci in SNS research, with studies pointing to SNS as a source of both positive and negative relationship outcomes. Although PDA was most frequently linked with favorable outcomes, the use of partnered relationship statuses can sometimes cause problems between partners. For instance, men and women were found to disagree about the extent to which a partnered status conveys one's actual commitment to a romantic relationship, with women believing the status to be indicative of seriousness and commitment, and men disagreeing. Such disagreements were further linked with dissatisfaction, but only for women. These perceptual differences between partners, and the

conflicts that often ensue, deserve further investigation as they point to a gap between Partner A's intention and Partner B's perception of the content shared in computer-mediated environments.

While the prevalence of SNS research indicates its importance, it also suggests that research examining other platforms (e.g., texting, IM applications) might be lacking. Instant messaging applications such as WhatsApp, which allow users to send and receive real-time multimedia messages, were found to instill feelings of togetherness and intimacy by facilitating "small, continuous traces of narrative" between conversation partners (O'Hara et al., 2014, p. 1131). However, these effects have not been examined in the context of romantic relationships specifically. Because such applications are increasing in popularity worldwide through the ubiquitous use of smart phones, with WhatsApp downloaded on more than one billion Android devices alone (Koum, 2015), their role in relational maintenance is in need of further examination.

Additionally, and specifically in LDRs, the deficit of face-to-face communication was found to be a potential moderator in the relationship between CMC and relational maintenance. Studies found that CMRM was associated with more positive relationship outcomes when partners had spent longer periods of time apart. The absence of face-to-face interaction, and particularly the length between face-to-face interactions, was found to positively predict various dimensions of relationship quality, including romantic love, partner idealization, communication quality, perceived agreement, satisfaction, and commitment. Although it has been suggested that spending time apart makes for happier couples (Purcell, 2013), the idea of deliberately spending time apart as an RM strategy has not yet been considered in RM research. However, given the

present findings, its potential benefits and implications for romantic relationship quality deserve further investigation.

Summary of Contribution

Research that explores CMRMBs can inform future research directions and practice in several disciplines. Understanding how couples derive quality from their communication practices can advance theory in social psychology and also help to guide practice in clinical psychology by inspiring therapy interventions aimed at optimizing relational maintenance and partner communication. Furthermore, highlighting the ways that partners derive satisfaction from CMRMBs can inspire innovation in the development of communication technologies. Such innovation would be aimed at enhancing specific technological affordances of different communication technologies with the goal of facilitating beneficial CMRMBs and ameliorating potential problems that couples may face in using CMRM.

The fact that partners face perceptual disparities regarding the use of Facebook for PDA suggests that Facebook's relationship status categories might be in need of clarification or updating. The only current options for partnered individuals include: engaged, married, in a relationship, in a civil union, in a domestic partnership, or in an open relationship. "It's complicated" is also an option, although it is unclear whether this status indicates a partnered relationship or not. Adjusting the categories to reflect the exclusivity (or lack thereof) of the relationship (e.g., dating exclusively, dating non-exclusively, committed to, etc.) might help partners to stay on the same page, avoid uncertainty, and avoid potential dialectic tensions.

Additionally, the review found that when partners shared rules regarding their respective CMC behaviors, they were more satisfied in their relationships. This reveals that although couples might face difficulties in their use of CMRM, they are nonetheless able to set boundaries

and limitations to the aversive interference of technology in their relationships. Couples facing issues with technology addiction or compulsive technology behaviors may benefit from therapy interventions that integrate such constructs. Also applicable in the context of couple therapy, the review found that texting has positive impacts on relationship satisfaction and is recommended as an intervention for couples. Specifically, Parker et al. (2013) suggest that texting can help couples to "create a sense of connection and increase intimacy" (p. 9). Furthermore, the present review found CMC to be a powerful conflict management in couples, and recommending the use of CMC during times of conflict may prove beneficial in helping couples overcome and solve their problems. Nonetheless, the review uncovered individual differences in the suitability of and preference for CMC use during conflict, and clinical judgment will need to be applied to assess suitability on a patient-by-patient basis.

The present review yielded several scholarly contributions as well, mainly through identifying gaps and directions for future research in the context of computer-mediated relational maintenance. In assessing the extent to which offline typologies translate in online environments, findings suggest distinct differences between offline and online RMBs, but also indicate overlaps between behaviors in each context. The literature examined in the present review demonstrates that certain RMBs are exclusive to CMC (e.g., surveillance), others are exclusive to face-to-face contact (e.g., task sharing), and still others are carried out through both types of platforms (e.g., positivity, assurances, conflict management, etc.). With couples appearing to derive value and enhance their relationship quality through both mediated and unmediated RMBs, relational maintenance has become increasingly multifaceted and diverse.

Conceptualizing the use of CMC for relational maintenance as a function of many different variables and possibilities associated with computer-mediated environments falls in line

with Gibson's (1979) notion of *affordances.* Affordances refer to "properties of the world that are compatible with and relevant for people's interactions" (Gaver, 1991, p. 79). The role of CMC in determining relationship quality is not fixed; it depends on how each actor uses and perceives the many potential opportunities for action (affordances) within CMC use. With so many factors influencing the holistic outcome of a couple's RMBs, it is worth examining how these factors relatively interact to impact relationship quality. For example, future research initiatives might ask how a greater share of overall communication taking place through texting or SNS (e.g., Luo, 2014), versus face-to-face or another CMC platform, influences relationship quality. Additionally, as couples have been shown to switch between different communication platforms (e.g., Scissors et al., 2013), it would be worth examining the role of these switches, and even possibly the direction of these switches (e.g., texting to email, email to texting), on relational maintenance. This literature has addressed this briefly in the context of conflict management (Scissors et al., 2013), but has not yet explored switches in light of more routine maintenance contexts.

Limitations

Limitations to the present review fall into two categories: limitations of included studies and limitations of the review itself. The included studies were associated with several limitations. The majority (65.71%) of papers included participants whose mean age fell in the range of young adults, the behaviors of which are not necessarily representative of all couples that use CMC for relational maintenance. Differences in digital literacy and media use across different generations suggest that examining other age groups might reveal varying links between relationship quality and CMC use in nonplatonic relationships. Additionally, all findings relied on self-report measures, which might not provide the most accurate evaluation because reports might be

influenced by the participants' feelings about the relationship (Metts, Spreecher, & Cupach, 1991). Furthermore, approximately two-thirds (62.86%) of all included studies did not control for relationship type (e.g., long-distance, proximal), a factor that appeared to account for considerable variance in the outcome classification (e.g., positive, negative, etc.) of included papers.

Lastly, it is worth noting that while findings have indicated clear associations between different types of CMRMBs and dimensions of relationship quality, the actual extent to which CMC use between couples *causes* changes in relationship quality is uncertain. Ideally, this could be corrected in future by introducing CMRM as an intervention and then comparing the ensuing relationship quality with a pre-CMC baseline, while controlling for confounding variables. However, the widespread adoption of CMC has made it difficult for researchers to make such comparisons because most couples have surpassed the pre-CMC stage. Additionally, simulating CMRM between couples, particularly when one partner is unaware of the simulation, has been associated with aversive outcomes (e.g., partner suspicion) because it prompts partners to deviate from their communicative norms, which some partners might find to be alarming and even a sign of infidelity (Luo & Tuney, 2014). Perhaps future research could circumvent these obstacles by performing dyadic studies where both partners are involved. Such studies could then manipulate various aspects of CMC use between couples (e.g., modality switching, frequency, tone) to determine *how* rather than *if* CMC use impacts relationship quality.

The present study also had its own set of limitations. The quality assessment measures typical of systematic reviews, ideally designed to assess the quality of randomized control trials, could not be applied to the present review due to vast differences in study design across the included papers. Therefore, the researcher used peer review as a measure of quality, including

only peer-review papers in the study. Although limiting the quality assessment did allow the researcher to tap into a broader range of findings, it may have allowed the inclusion of studies where methodological quality was possibly not up to par. Future research aimed at the construction of a quality measure for studies that examine interpersonal relationships could help to ameliorate this issue in future investigations.

Second, although scholars have distinguished routine from strategic relational maintenance behaviors (Duck, 1988), this study did not differentiate between the two. Research indicates varying relational outcomes for each type, suggesting that enacting behaviors routinely predicts relationship satisfaction more strongly than doing so strategically (Dainton and Aylor, 2002). Future research in this context should, therefore, examine them separately for a more accurate understanding of how online behaviors influence relationship quality.

Third, this study made no distinction between reports of partner satisfaction and individual satisfaction. However, as Canary & Zelley (2003) suggest, a more telling relationship might exist between an individual's behavior and his or her partner's satisfaction. Although studies did vary in their respective assessment of relationship outcomes, these differences were not noted or considered in the review. Future research in the field of relational maintenance as a whole would benefit from the enforcement of such distinctions as they reveal more about how partners' behaviors impact one another's relational perceptions.

Conclusion

Overall, the present review found that the majority of included papers from the CMRM literature reported positive or mixed-positive results regarding links between CMC, relational maintenance, and relationship quality. Outcomes were exceptionally positive in the context of LDRs, pointing to the high value of CMRM for LDR partners. Only the use of instant messaging

between couples was linked with more negative than positive outcomes, with all other platforms (SNS, phone, video, texting, email) showing predominantly positive effects on relational maintenance.

In determining the extent to which offline relational maintenance typologies translate in an online environment, the review found support for six RM categories via CMC: Positivity, openness, social networks, conflict management, surveillance, and openness. Conflict management received the most support in the literature as a CMRMB, where CMC was found to assist with conflict de-escalation, management of emotions, and problem solving by giving partners more time to construct their ideas. Surveillance emerged as a relatively new category in the literature, and is the only RMB category found in the present review that was not included in Stafford et al.'s (2000) RMB typology.

Furthermore, and in addition to the more standard measures of relationship quality (e.g., satisfaction, commitment, intimacy), the review also pinpointed jealousy and idealization as two relatively unique outcomes associated with CMRM. Implications of jealousy varied in different relationship contexts, with jealousy serving as an affirmation of love and protectiveness in the context of LDRs, and as a nuisance and source of conflict in other contexts. Idealization was associated with more satisfaction and intimacy in couples, and was also found to be higher when individuals spent longer periods of time apart.

LDRs and SNS were the two most popular themes, suggesting their importance in the discussion of CMRMBs but also pointing to gaps in the literature and areas for further investigation. Other relationship types, such as exclusively online couples, cohabitating couples, proximal couples, etc. deserve similar mutually exclusive attention. Other CMC platforms also

deserve more extensive attention, such as smartphone IM apps that continue to surge in popularity across the world.

Findings from the present study hold value in several disciplines, particularly in couple therapy and tech innovation contexts. Although research in the CMRM field is somewhat inconsistent, clear efforts are being made by scholars to advance CMRM as an academic discipline, particularly in the past five years. Investigating the potential future research directions recommended here will help relational maintenance scholars to achieve a more holistic understanding of CMRM and its impacts on relationship quality.

APPENDICES

APPENDIX A

Database Search Strategy

Keywords: Nonplatonic relationships, computer-mediated communication, satisfaction, relational maintenance

Context: Nonplatonic Relationships

romantic OR nonplatonic OR non-platonic OR intimate OR dating OR couples

Context: Online Communications

computer-mediated communication OR mediated communication OR electronic communication OR communication technologies OR information and communication technologies OR social network sites OR Facebook OR Twitter OR email OR e-mail OR texting OR text messages OR text messaging OR SMS OR online communication OR online

Outcome: Satisfaction

satisfaction OR relational satisfaction OR relationship satisfaction OR fulfillment OR happiness OR gratification OR contentment

Model Search Strategy

all((satisfaction OR relational satisfaction OR relationship satisfaction OR fulfillment OR happiness OR gratification OR contentment)) AND all((computer-mediated communication OR information and communication technologies OR texting OR social network sites OR Facebook OR Twitter OR email OR e-mail OR text messages OR text messaging OR SMS OR chatting OR online communication)) AND all((romantic OR nonplatonic OR dating OR couples OR non-platonic OR relational maintenance))

Generated 1192 results (366 full text) on Monday, March 23, 2015.

APPENDIX B

Cross-Tabulation of Age Data

Table 12: Cross-Tabulation of Age Data

Paper		**Age Data**		
Author	Year	Age Min	Age Max	Mean Age
Anderson, Emmers-Sommer	2006	18	62	
Baym, Zhang, Kunkel	2007			20.67
Billedo, Kerkhof, Finkenauer	2015	17	52	
Brody	2013	18	54	
Brown, College	2008	18	22	19.93
Coccia, Darling	2014			20.8
Coyne et al.	2011			32.31
Jiang, Hancock	2013	18	34	20.97
Dainton	2013			21.36
Elphinston, Noller	2011	18	25	19.75
Emmers-Sommer	2004	18	40	21.71
Fox, Osborn, Warber	2014	18	22	
Fox, Warber	2012	18	25	20.79
Frisby, Westerman	2010	18	64	26.95
Hand, Thomas, Buboltz	2012	18	57	20.82
Luo	2014			19.32
Luo, Tuney	2014			19.63
McGee	2014			24
Sidelinger et al.	2009			20.81
Miller-Ott, Duran	2012			20.33
Morey, Gentzler, Creasy	2013	18	27	20.01
Neustaedter, Greenberg	2012	19	35	
Papp, Danielewicz, Cayemberg	2012			
Parker et al.	2013	18	53	27.9
Perry, Werner-Wilson	2011	18	49	27.78
Saslow, Muise, Impett, Dubin	2012	18	73	36.62
Schade, Sandberg, Bean, et al.	2013	18	25	22.5
Scissors, Gergle	2013	18	30	21
Scissors, Roloff, Gergle	2014	18	64	21.9
Slatcher, Vazire, Pennebaker	2008			19.04
Stafford, Merolla	2007	17	23	19.86

Table 12 (cont'd)

Steers, Overup, Brunson, et al.	2015	18	53	22.12
Stewart, Dainton, Goodboy	2014	18	30	20.05
Utz, Beukeboom	2011			22
Vitak	2014	22	71	44

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