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Selection of memory book content: Agreement in content as a function of informant relationship to memory book recipient

Rebecca J. Allen
University of South Florida, rjallen@mail.usf.edu

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Selection of Memory Book Content: Agreement in Content as a Function of
Informant Relationship to Memory Book Recipient

by

Rebecca J. Allen

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science
Department of Behavioral and Communication Sciences
College of Communication Sciences & Disorders
University of South Florida

Major Professor: Michelle S. Bourgeois, Ph.D., CCC-SLP
Howard Goldstein, Ph.D., CCC-SLP
R. Michael Barker, Ph.D.

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June 22, 2017

Keywords: dementia, cognitive decline, memories, sensory recall, sensory cues

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DEDICATION

My humble effort, I dedicate to my loving husband, Michael Allen, who continually supported me and believed in the importance of this project. To my daughter, Caitlin Terry, and sister, Diane Harte, whose lent ear and patience throughout the journey was much appreciated. To my collegiate friends, especially Brittany Hershey, Kristin Radi, Marla Farrior, Amber Anderson, Stefani Sanford, and Alexis Jehnsen, whose continued motivation and friendship was essential to the completion of this journey. Thank you.
ACKNOWLEDGMENT

I would like to express my deepest gratitude to Dr. Michelle S. Bourgeois for her unwavering support and mentorship throughout this project, and for introducing me to Speech Language Pathology’s contribution for improved quality of life for persons with dementia and their loved ones. I also extend my sincere appreciation to Dr. R. Michael Barker and Dr. Howard Goldstein for their confidence and support in my project, and serving as committee members.

A special thanks to those professors who offered collegial guidance in the field of research over the years, particularly Dr. Adithya Chandregowda and Dr. Kyna Betancourt. Their enthusiasm and love of research is contagious, and their encouragement to lead me down this path is appreciated.
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ABSTRACT

This study was designed to determine to what extent provision of personally relevant information and sensory cues would agree between Recipient and Informant for selection of memory book content. Six dyads married to each other an average of 29.17 years (SD = 10.03), between the ages of 43 and 70 years (Mean = 57; SD = 8.39), and cognitively competent (i.e., no diagnosis of cognitive impairment) participated. Participants completed questionnaires independently and provided personally relevant information/memories, aversions towards select memories/topics, and sensory cues on behalf of themselves (as “Recipient) and their spouse (as “Informant”). For provision of personally relevant information/memories, Informant and Recipient was 44.58% in agreement (SD = 14.99). For provision of aversions towards select memories/topics, Informant and Recipient was 24.86% in agreement (SD = 30.81). For provision of sensory cues, Informant and Recipient was 19.6% in agreement (SD = 30.81). Findings suggest that memory books made by others may not include the most important memories of the Recipient, thereby limiting the effectiveness of the memory book. Therefore, efforts should be made to encourage individuals to create a memory book while cognitively competent or share their most meaningful memories with the person who is most likely to make them a memory book if they should need one in the future.
INTRODUCTION

The Merriam-Webster dictionary (2006) defines communication as “the act or process of using words, sounds, signs, or behaviors to express or exchange information…ideas, thoughts, feelings, etc., to someone else.” This exchange of information allows individuals to connect to one another as well as to express basic wants and needs (Müller & Guendouzi, 2005; Tomasello, 2010). It is an interaction between sender and receiver, with the assumption that all components perform as they should. When they do not, however, communication breakdowns occur. Individuals in the middle stage and late stage of dementia often are unable to maintain conversations or express their wants and needs (Kempler, 1995). They often rely on information provided by loved ones, caretakers, or healthcare professionals to communicate for them.

Middle-Stage Dementia and Memory Books

Persons in middle-stage dementia no longer initiate conversation and, instead, become passive participators (Brookshire, 2007; Kempler, 1995). However, at this stage, they are unaware of any communication deficit (Kempler, 1995). To help elicit and enhance their conversational skills, memory books were introduced as an external memory aid (Bourgeois, 1990) to pair with spared cognitive skills (Bourgeois, 1991). Fashioned as a wallet-sized photo album, the memory book consisted of 30 familiar, captioned photographs separated in three categories (i.e., my life, my day, and myself) pertaining to factual information difficult to recall (e.g., orientation, names of family members, etc.) and memories personally relevant to the person
with dementia. Bourgeois found that memory books not only elicited enhanced conversations, but also reduced ambiguous, perseverative, and unintelligible utterances made by persons in the middle stages of Alzheimer’s disease during conversations with familiar partners. Additional studies further support this finding (Bourgeois, 1992, 1993; Bourgeois & Mason, 1996; McPherson, Furniss, Sdogati, Cesaroni, Tartaglini & Lindesay, 2001; Bourgeois, Dijkstra, Burgio, & Allen-Burge, 2009).

Individuals who provided information for the memory books varied among the studies. Husbands (Bourgeois, 1990), family members (Bourgeois, 1992, 1993; Hoerster, Hickey, & Bourgeois, 2001; Andrews-Salvia, Roy, & Cameron, 2003), caregivers (Spilkin & Bethlehem, 2003), a director of recreation therapy (Bourgeois, 1993), relatives and staff (McPherson, Furniss, Sdogati, Cesaroni, Tartaglini, & Lindesay, 2001), and a research team with the assistance of the resident’s primary nursing aide (Bourgeois, Dijkstra, Burgio, & Allen-Burge, 2001) contributed information to the experimenter for consideration and inclusion. Topic selections pertaining to memories were relatively consistent among the contributors as evidenced in Table 1. This may be related to how the information was solicited and/or collected. Bourgeois (1992, 2014) used an information form with specific prompts (e.g., birthdate, schools, spouse, children).

Although there is relative agreement of topic selection among contributors across studies in Table 1, agreement between contributor and the person with dementia within each study is not considered. One presumption is that agreement would exist between the person with dementia and spouse, due to the intimacy of the relationship, and the overall provision of extensive and comprehensive care (NAC/AARP, 2015; Bourgeois & Hickey, 2009). Even so, experiences shared collectively may not agree in memory recall due to individual perspective and personal
relationship to the event. Significant variations between designated family members and patients were observed by Heyland et al. (2006) concerning quality end-of-life care. However, Bourgeois, Beach, and Schulz (1996) observed that substantial and variable disagreement between primary and secondary caregivers were unrelated to relationship status (e.g., spouse, adult children, nursing staff, etc.) and contributing factors (i.e., years in the relationship, basic dyad history, background, and demographic variables). In addition, certain cultures (e.g., Pakistani) do not place emphasis on intimate marital communication as expressed in the Western culture (Rehman & Holtzworth-Munroe, 2007), which may broaden the gap of spousal agreement in provision of information.

Table 1: Contributor and Selection of Topic for Memory Books

<table>
<thead>
<tr>
<th>Contributor</th>
<th>Study</th>
<th>Topics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husbands</td>
<td>Bourgeois, 1990</td>
<td>x x x</td>
</tr>
<tr>
<td>Family Members</td>
<td>Bourgeois, 1992</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>Bourgeois, 1993</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>Hoerster, Hickey, &amp; Bourgeois, 2001</td>
<td>x x x</td>
</tr>
<tr>
<td></td>
<td>Andrews-Salvia, Roy, &amp; Cameron, 2003</td>
<td>x x</td>
</tr>
<tr>
<td>Relatives and Staff</td>
<td>McPherson, Furniss, Sdogati, Cesaroni,</td>
<td>x x</td>
</tr>
<tr>
<td></td>
<td>Tartaglini, &amp; Lindesay, 2001</td>
<td></td>
</tr>
<tr>
<td>Caregivers</td>
<td>Spilkin &amp; Bethlehem, 2003</td>
<td>x x</td>
</tr>
<tr>
<td>Resident’s primary nursing</td>
<td>Bourgeois, Dijkstra, Burgio, &amp; Allen-Burge, 2001</td>
<td>x x x</td>
</tr>
<tr>
<td>therapy</td>
<td>Bourgeois, 1993</td>
<td>x x x</td>
</tr>
</tbody>
</table>

*Selection based on memory failures of personally relevant information

Given the opportunity to select the most viable candidate to contribute information may still result in disagreement of information. Even well-intended content provided by a contributor,
such as shared family stories, may be less salient to some of the members in the story demonstrated by Norrick (1997) who terms these stories as “twice-told tales.”

Once Sherry has finished, Lydia makes reference to "rubber wallets" in a way that makes it clear she expects her hearers to identify the family story that she has in mind. Again the story revolves around thrift, namely Lydia giving "the boys" rubber wallets instead of the more expensive leather ones they desired. The boys in question are Ned [and Brandon], who is present, and the third, older brother Henry, who is not. Lydia even describes the ongoing consequences of the past event, alluded to with "Henry still today kids me about rubber wallets." Thus Henry would certainly identify the allusion to rubber wallets, and know the story, but neither of the two sons present seems to. Brandon asks rather bewildered: "Rubber wallets?" And Ned says explicitly that he does not remember, though it seems he recognizes himself to be one of "the boys" mentioned. We see here that even a presumed family story can backfire when one member presupposes shared memories which others fail to exhibit. What Lydia takes to be at least a vicarious F-event [family event] turns out to have been an A-B event [story known to the teller and one other participant] that she shares only with her oldest son, Henry. Where we expect signs of recognition and co-narration, we get instead befuddled questions and confessions like “I don't remember.” Consequently, too, the story never really gets told at all: Lydia concentrates on the results of her "scrounging cheap" purchase, rather than on the events of the story itself.

In this example, selecting the “rubber wallet” story for a memory book would be a viable choice for Henry, but not for the other two sons. While the story may elicit conversation, Ned and Brandon would only be able to contribute input on a superficial level because the story was not personally relevant to them. The same may hold true when a person with dementia responds to memory book topics provided by other individuals. Statements, such as “That’s all there is about that,” “I can’t think of anything else to say,” “It’s none of your business what I do during the day,” and “Why do you want to know all of this stuff,” (Bourgeois, 1990, 1992) may suggest that the person with dementia would prefer different topics to discuss. Off-topic verbalizations (Andrews-Salvia, Roy, & Cameron, 2003; Bourgeois, 1990, 1992, 1993; Hoerster, Hickey, & Bourgeois, 2001; McPherson, Furniss, Sdogati, Cesaroni, Tartaglini, & Lindesay, 2001) could be
another indication that the person with dementia favors another topic over the one chosen by the contributor. Despite the most sincere intentions, information provided by a contributor may differ significantly enough to diminish conversations that could transpire otherwise. Still, it is important to note that previous studies resulted in positive outcomes for enhanced on-topic utterances, as well as promising maintenance effects with little caregiver training (Bourgeois, 1990, 1992). Determining if information is more effective, by direct provision of the person with dementia prior to cognitive decline, would only strengthen the validity in future studies.

**Late-Stage Dementia and Sensory Recollection**

Persons in late-stage dementia progressively decline in their communicative skills. Word substitutions, empty speech, poor topic maintenance, and overuse of pronouns (Acton, Yauk, Hopkins & Mayhew, 2007) characterize the decline in the communication skills until the person with dementia is unable to speak (Müller & Guendouzi, 2005). Receptive communication also is compromised due to reduced processing speed and word retrieval difficulty (Acton, Yauk, Hopkins & Mayhew, 2007). As a result, communication is diminished and the ability to convey basic wants and needs are often unsuccessful (Kempler, 1995). Agitation and behavioral changes may ensue, requiring investigative skills on behalf of caregivers and staff to ameliorate the situation. In turn, caregivers and staff may project personal interpretations and preconceived notions over that of the patient’s expressed needs (Sekerak & Stewart, 2014). Quality of life is thereby reduced for the person with dementia as well as the caregiver(s).

While memory books bridge the gap of declining communication during middle-stage dementia, recall of the same memories in late-stage dementia can evoke positive feelings (Sung & Chang, 2005) and improve quality of life when communication is no longer viable. Memory
books capitalize on visual cues (i.e., personalized pictures and captions); however, the remaining senses that form memories (Harrison, Son, Kim, and Whall, 2007) are not utilized, thereby limiting resources for future recall. Incorporating all of the senses may permit a person to relive a memory by introducing any of the senses (i.e., smell, touch, sound, taste, and sight) that contribute to the formation of the memory (Conway, 2001) or to evoke positive emotions (Baker et al., 1998). For example, olfactory-evoked memories are more emotional than other sensory cues (Herz, 2004; Herz & Cupchik, 1995; Herz & Engen, 1996) and more vivid and pleasant than word-cued memories (Chu & Downes, 2002; Rubin, Groth, & Goldsmith, 1984) as cited in the Willander & Larsson (2006) study. Patients with moderate to severe dementia have benefited from the use of multisensory stimulation with (Spector et al., 2003) or without (Baker et al., 2001) cognitive stimulation, demonstrated immediately post-session by increased spontaneous speech, as well as increased attention and initiative. Pimental (2009) incorporated the use of multisensory stimulation with compensatory strategies (i.e., using context, repetition, and verbal/written choices) developed by Bourgeois (2007) during thematic group sessions with positive outcomes. Simulated presence and music therapy have shown effective treatment outcomes by capitalizing on the sense of hearing to reduce agitation and improve quality of life (Garland, Beer, Eppingstall & O'Connor, 2007). Aromatherapy and light therapy also have shown promising outcomes (Burns, Byrne, Ballard & Holmes, 2002). Therefore, provision of personally relevant sensory memories, provided by the person prior to entering late-stage dementia, may perhaps evoke positive memories and emotions, reduce agitation, and thereby preserve any ability to connect and/or communicate with others. Heyland et al.’s (2006) findings further support a tailored or patient-specific approach to improve quality end-of-life care. Unfortunately, the person with dementia and family members seldom engage in early education
to address matters that foment in the late stage of dementia (Sekerak & Stewart, 2014), much less obtain personally relevant sensory information to potentially recall memories, evoke positive feeling, reduce agitation, or improve quality of life.

The purpose of this study was to determine agreement in content selection for memory books, including sensory cues, elicited from the individual with dementia and another individual. However, additional questions were raised about gathering information for examining agreement in content selection between two persons. Literature could not be identified that addressed agreement in recall of memories from normally aging spouses or other relationship pairs. For that reason, this study sought to obtain data from normally aging individuals to determine agreement in content selection. Information obtained in this pilot study focused on personally relevant information, memories, and sensory cues deemed important by the individual to include in a future memory book. Data collected from this study will inform future studies that focus on the effect of stage of dementia (mild or moderate) on the concordance of personally relevant information elicited by the person with dementia and their informant. Therefore, the three research questions asked in this study were:

1. To what extent will provision of personally relevant information to include in a memory book agree when elicited by another individual compared to direct provision from the primary individual?

2. To what extent will provision of aversions towards select memories/topics to exclude from a memory book agree when elicited by another individual compared to direct provision from the primary individual?
3. To what extent will the provision of sensory cues to evoke positive memories and/or emotions, to preserve any ability to connect and/or communicate with others in late-stage dementia, agree when elicited by another individual compared to direct provision from the primary individual?

It was hypothesized that there will be a mild to moderate agreement between another individual and the primary individual for provision of personally relevant information to include in a memory book, as well as provision of aversions towards select memories and/or specific topics to exclude from a memory book. It is further hypothesized that there will be a limited agreement in sensory information elicited from another individual and the primary individual due to the personal nature of sensory information. These findings will support the practice of eliciting relevant personal and sensory memory content from the primary individual in the making of a memory book prior to the onset of cognitive decline. Furthermore, these findings will provide information for future studies that focus on the effect of stage of dementia (mild or moderate) on the concordance of personally relevant information elicited by the person with dementia and their informant.
METHOD

Participants

Candidacy for participation in this study required dyads who knew one another intimately. Each dyad included a memory book recipient (“Recipient”) and a memory book informant (“Informant”). Six couples between the ages of 43 and 70 years (Mean = 57; SD = 8.39) participated. Couples were married an average of 29.17 years (SD = 10.03), ranging from 17 to 44 years of marriage. The IRB approval letter is included as Appendix 1. Inclusion criteria required participants to be cognitively competent (i.e., no diagnosis of cognitive impairment), married to each other more than 10 years, and willing to devote time and consideration into the contribution of memory book content on behalf of themselves and each other. Exclusion criteria included a medical diagnosis of cognitive decline. Participants were recruited via word of mouth through vocational, academic and community settings. Participants were required to sign informed consent forms approved by the University of South Florida’s Institutional Review Board, and acknowledged their understanding of the experiment and participation as willing volunteers. The consent form is included as Appendix 2.

Setting

Participants completed questionnaires independently, in a setting of his/her choice, absent of any external interruptions and contributions by other persons. Correspondence and documents were transmitted electronically to participant’s locations (ranging from Florida to New
Hampshire), with the exception of two completed questionnaires and signed consent forms returned in person at USF Communication Sciences & Disorders Building.

**Procedures**

After obtaining verbal consent to participate in the study, both participants were given (via email or in person) identical questionnaires consisting of two sections: 1) information pertaining to the individual; 2) information pertaining to the spouse, labeled as Husband # and Wife #. The participants were instructed to not discuss the contents of the questionnaires with each other or other individuals while participating in the study; failure to remain confidential would result in disqualification. They were asked to complete the questionnaires and return them electronically or in person within one week.

At the end of the study, questionnaires were returned to participants for comparison and discussion with their spouse.

**Materials**

Questionnaires, provided to each participant, consisted of two sections: (1) provision of individual information, and (2) provision of spousal information, each with three parts (memories, aversion to any topics, and sensory recollection). Both sections were identical in content, with the exception of detailed instructions provided only in Section 1. The first part, in each section, required provision of 10 personally relevant memories and associated senses to recall each memory. The second part in each section requested provision of any memories and/or topics the individual may have an aversion towards in conversation. The third part, in each section, required provision of sensory information (i.e., sight, smell, sound, touch, taste,
temperature) to elicit memory/emotions to manage or enrich daily life. While it is understandable that sensory recollection may not be expressed to others (including spouses), the participants were required to complete this section to the best of his/her ability. The Questionnaire is included as Appendix 3.

Design

This study compared agreement in selection of memory book content as a function of Informant relationship to Recipient. Agreement was determined by comparing Parts I, II, and III in the Informant section to Parts I, II, and III in the Recipient’s section, and calculating the amount of agreement in the content of the information provided by both individuals.

Dependent Variables

The questionnaires were analyzed by determining the extent to which the content of each entry matched the content provided by the other person for each part of the questionnaire (i.e., memories, aversion to any topics, and sensory recollection). Content was defined as a specific factual idea (i.e., “My wedding day”) and Agreement was defined as any variation of the same factual idea (i.e., “Our wedding day,” “The day we got married,” “We got married on June 4, 1982.”). The number of entries in agreement and disagreement (or omitted) were tabulated, and percentage of agreement for each section was entered into an Excel spreadsheet.

Reliability

Reliability of the coding was established by recruiting and training a second unbiased experimenter to 80% agreement on a sample questionnaire. The second experimenter independently measured percentage of agreement among the three parts. For Part 1, 33% of the
entries were recoded, yielding 100% reliability. For Part 2, 33% of the entries were recoded, yielding 100% reliability. For Part 3, 20% of the entries were recoded, yielding 96.3% reliability, with a range of 93.9 – 100% agreement.
RESULTS

Question One: Agreement in Provision of Recipient’s Personally Relevant Information and/or Memories

To determine to what extent provision of personally relevant information agreed between Informant and Recipient, participants completed Section I, Part I (as Recipient) and Section II, Part I (as Informant). Informant’s provision of information was then compared to Recipient’s information. Because husband and wife participated as both the Recipient and Informant, comparison between the data reflected their participation in both roles. The average agreement in contribution of personally relevant information/memories was 44.58% (SD = 14.99), ranging from 20-70% agreement. Two couples (3 and 6) demonstrated concordance in their agreements about each other’s memories (60% and 40%, respectively). For 5 of the 6 dyads, husbands had greater agreement about their wife’s memories than wives had for their husband’s memories. Comparison of Informant’s agreement to Recipient’s selected memories between each couple, and distinction between husband and wife contribution, is shown in Figure 1.

Question Two: Agreement in Provision of Recipient’s Aversions Towards Select Memories and/or Specific Topics

To determine to what extent provision of aversions towards select memories and/or specific topics agreed between Informant and Recipient, participants completed Section I, Part II (as Recipient) and Section II, Part II (as Informant). Informant’s provision of information was
then compared to Recipient’s information. Because husband and wife participated as both the Recipient and Informant, comparison between the data reflected their participation in both roles. The average agreement was 24.86% (SD = 30.81), ranging from 0-100% agreement. One spouse in Couples 1, 2, 4, and 6 did not agree at all (0%) with the information provided by the other spouse. Spouse 2 (i.e. wife) of Couple 4 correctly identified 100% of the other spouse’s (i.e., husband’s) aversions, however the husband was 0% in agreement to the wife’s 13 listed aversions, stating she had “none”. Five out of six husbands had greater agreement about their wife’s aversions than their wife had about their aversions. Comparison of Informant’s agreement to Recipient’s selected aversions between each couple, and distinction between husband and wife contribution, is shown in Figure 2.
Question Three: Agreement in Provision of Sensory Information to Evoke Positive Memories and/or Emotions

To determine to what extent provision of personally relevant sensory information would agree between Informant and Recipient, participants completed Section I, Part III (as Recipient) and Section II, Part III (as Informant). Informant’s contribution of information was then compared to Recipient’s information. Because husband and wife participated as both the Recipient and Informant, comparison between the data reflected their participation in both roles. The average agreement in provision of sensory information was 19.6% (SD = 16.7), ranging from 0-48.4% agreement. Two spouses in Couples 2 and 4 had zero agreement in sensory information with the other spouse; and none of the spouses reached 50% agreement.
Comparison of Informant’s agreement to Recipient’s selected sensory memories for each couple, and distinction between husband and wife contribution, is shown in Figure 3.

**Figure 3: Informant’s Agreement to Recipient’s Selected Sensory Memories**
DISCUSSION

The purpose of this study was to investigate agreement between Informant and Recipient in provision of Recipient’s 1) personally relevant information/memories for memory book content, 2) aversions towards select memories and/or specific topics for exclusion in memory book content, and 3) sensory cues to evoke positive memories and emotions to preserve any ability to connect and/or communicate with others in late-stage dementia. The results of the study revealed Informants’ provision of personally relevant information and/or memories for inclusion in memory book was 44.58% accurate and provision of aversions to select memories and/or topics for exclusion in memory book content was 24.85% accurate. Combined average for inclusion and exclusion of memory book content was 34.72% in agreement. Both provision of personally relevant information and aversions towards select memories and/or specific topics reflect a greater difference in agreement than originally hypothesized. This suggests that spouses who have been married at least 10 years may not have revealed these memories, or the importance of these memories, to their spouse. It seems unlikely, therefore, that these spouses would select the most important memories to put in their spouse’s future memory book should they need one.

Interestingly, data revealed 5 out of 6 husbands provided accurate information for Part I (i.e., personally relevant information) as well as Part II (i.e., aversions) equal to, or greater than, their wives provided for them. This may suggest that wives more readily than husbands reveal their memories, or the importance of their memories, as well as aversions to memories and/or
select topics for conversation. It seems likely, therefore, that husbands would be more accurate than wives to select the most important memories for their spouse’s future memory book should they need one. However, given that husbands’ accuracy ranged from 28.1% to 48.33%, it is unlikely that the overall contribution of content for a memory book would benefit the wife due to considerable differences.

Three participants listed information rather than memories for Part I (i.e., the desire to have been a ballerina or concert pianist, the general interest for scuba diving and driving, and the love of the beach). This may suggest the importance that memory book content encompasses factual information, memories, and also information pertaining to interests or past desires. However, the latter may or may not be apparent to the Informant when preparing a memory book.

Also, two Recipients listed an aversion (in Part II) that was entered by the Informants as a relevant memory for the Recipient (in Part I). Another Informant stated the Recipient did not have any aversions, yet the Recipient listed thirteen. This suggests the importance of discussing aversions as well as preferences when selecting memory book content.

While the accuracy of factual information was not verified in this study, two participants provided incorrect years (-/+1) of marriage: one celebrating their anniversary in a month (+1 year incorrect), and the other in six months (-1 year incorrect) from the date of this study. In addition, years of marriage, ranging from 17 years to 44 years, did not account for agreement, ranging from 20.83% agreement to 41.66% agreement, with the best agreement for the couple who had been married 23 years. Average age of couples, ranging from 44 to 67 years, revealed the youngest couple as most accurate (41.66%), and the couple whose average age was 50.5 years as the least accurate (20.83%). This suggests that agreement in provision of information
may rely more on the age of the person than the duration of marital years. It further supports the importance to share personally relevant information as early as possible, rather than waiting until the onset of cognitive decline.

The results of spousal agreement regarding sensory cues was predicted to be considerably limited. The agreement between Informant and Recipient was very low, at 19.6% accuracy (SD = 16.7). Therefore, contribution of sensory information provided by the Informant compared to direct provision by the Recipient reflects a considerable difference as hypothesized. This suggests that persons more readily share factual information, but refrain from expressing sensory cues that evoke the information, thereby limiting resources for future recall. Incorporating all of the senses can permit a person to relive a memory by introduction of any one of the senses (i.e., smell, touch, sound, taste, and sight) that contribute to the formation of the memory. Therefore, it seems highly unlikely that spouses would select personally relevant sensory information to evoke positive feelings, reduce agitation, and preserve any ability for the Recipient to connect and/or communicate with others.

When returning their completed questionnaires, participants electively expressed their experience participating in the study. Some spouses said they had difficulty in recalling ten memories for themselves and/or spouse. They also remarked that the time required to complete the questionnaire was much longer than expected. Several thought that it had been beneficial to participate in the study because the questions created a desire to learn more about their spouse (i.e., memories, aversions, and sensory cues), and to express their interests to their spouse (for a future memory book, if needed). One person expressed the desire to write an autobiography. Another person mentioned wanting to share this study informally to others so that they might benefit by discussing memories and aversions with their spouse.
Limitations to this study include questionnaire formatting, particularly in Part III, with the provision of check boxes next to all possible sensory cues. While the intent was to assist the participant in considering each sense as a contributable factor for recall, 2 out of 12 participants provided information for every sensory cue. Additionally, the inclusion of the check boxes next to all possible sensory cues placed emphasis on the provision of sensory cues rather than the exclusion. For example, 5 out of 12 participants stated the absence of sensory stimuli (e.g., sound - silence) as well as nonsensory information (i.e., the need to be alone, to be given time to work out their current state, to pray, or to take medication as needed). While the latter does not pertain to sensory recall, it does suggest that an open-ended question format, in which participants could write whatever was meaningful to them, would have revealed a wider range of answers. Another limitation includes limiting the participants to spouses. While spouses were selected for this study as a first step in investigating the agreement of information between individuals, other relationships (i.e., Recipient and a child, parent, sibling, or best friend) warrant investigation.

Future studies should explore the effect of stage of dementia (mild or moderate) on the concordance of personally relevant information elicited by the person with dementia and their informant. Results from this study would suggest that there would be limited agreement in the information provided by the person with dementia and their informant as well. The inclusion of sensory information to memory books in future studies could benefit those in late-stage dementia to evoke positive memories and emotions, reduce agitation, and thereby preserve any ability to connect and/or communicate with others. Additional populations, who are limited in communication, might also benefit in future studies with focus on sensory cues as a means to evoke responses and to communicate with an individual in the most basic form of interaction. In addition, future studies could delineate the difference between communication and memories,
and the provision of information pertaining to each. And possibly, the most effective direction is continued research to support education and awareness on the importance of sharing and/or documenting personally relevant information while cognitively able.
CONCLUSION

This study was designed to determine to what extent provision of personally relevant information and sensory cues would agree between Recipient and Informant for selection of memory book content. Spouses who had been married at least ten years were found to have very different opinions of each other’s most important memories, aversions, and sensory memories. This finding suggests that memory books made by others may not include the most important memories of the recipient, thereby limiting the effectiveness of the memory book. Therefore, efforts should be made to encourage individuals to create a memory book while cognitively competent or share their most meaningful memories with the person who is most likely to make them a memory book if they should need one in the future.
REFERENCES


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APPENDIX 1:

IRB APPROVAL LETTER

June 8, 2017

Rebecca Allen
Communication Sciences and Disorders
Tampa, FL 33613

RE: Expedited Approval for Initial Review
IRB#: Pro00031148
Title: Selection of memory book content: Differences in content as a function of informant relationship to memory book recipient

Study Approval Period: 6/8/2017 to 6/8/2018

Dear Mrs. Allen:

On 6/8/2017, the Institutional Review Board (IRB) reviewed and APPROVED the above application and all documents contained within, including those outlined below.

Approved Item(s):
Protocol Document(s):
Protocol Version #1.docx

Consent/Assent Document(s)*:
SB Adult Minimal Risk.docx.pdf
Appendix 1: (Continued)

*Please use only the official IRB stamped informed consent/assent document(s) found under the "Attachments" tab. Please note, these consent/assent documents are valid until the consent document is amended and approved.

It was the determination of the IRB that your study qualified for expedited review which includes activities that (1) present no more than minimal risk to human subjects, and (2) involve only procedures listed in one or more of the categories outlined below. The IRB may review research through the expedited review procedure authorized by 45CFR46.110. The research proposed in this study is categorized under the following expedited review category:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

As the principal investigator of this study, it is your responsibility to conduct this study in accordance with IRB policies and procedures and as approved by the IRB. Any changes to the approved research must be submitted to the IRB for review and approval via an amendment. Additionally, all unanticipated problems must be reported to the USF IRB within five (5) calendar days.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

John A. Schinka, Ph.D.

John Schinka, Ph.D., Chairperson
USF Institutional Review Board
Informed Consent to Participate in Research Involving Minimal Risk

Pro # 00031148

You are being asked to take part in a research study. Research studies include only people who choose to take part. This document is called an informed consent form. Please read this information carefully and take your time making your decision. Ask the researcher or study staff to discuss this consent form with you, please ask him/her to explain any words or information you do not clearly understand. We encourage you to talk with your family and friends before you decide to take part in this research study. The nature of the study, risks, inconveniences, discomforts, and other important information about the study are listed below.

We are asking you to take part in a research study called:

Selection of memory book content: Differences in content as a function of informant relationship to memory book recipient

The person who is in charge of this research study is Michelle S. Bourgeois, Ph.D., University of South Florida. This person is called the Principal Investigator. However, other research staff may be involved and can act on behalf of the person in charge.

The research will be conducted at The University of South Florida Speech Language and Hearing Clinic (USF-SLHC; 202 E. Fowler Avenue, PCD 1017, Tampa, FL 33620, USA) in Tampa, Florida.
Appendix 2: (Continued)

Purpose of the study
Memory books are an effective modality to elicit and enhance conversation for persons in middle-stage dementia. Content selected for the memory book is determined by individuals (e.g., spouse, family member, or hospital staff) on behalf of the person with dementia. While research supports effective use of memory books in its current state, having the person select memory book content for him/herself has not been explored.

This study is being conducted for a thesis by the student, Rebecca Allen. She is a masters student from the University of South Florida (USF). She is being guided in this research by her advisor, Michelle S. Bourgeois, Ph.D.

Why are you being asked to take part?
We are asking you to take part in this research study, along with your spouse, in order to obtain information about what memory book content individuals would select for themselves and for their spouse, and to determine differences in content selection based on the person providing the information. Data collected from this study will inform future studies that will focus on the effect of stage of dementia (mild or moderate) on the concordance of personally relevant information elicited by the person with dementia and their informant.

Study Procedures:
If you take part in this study, you will be asked to:

- Complete a two-section questionnaire as contribution for memory book content. In the first section, you will provide information that is personally relevant to you. In the second section, you will provide information on behalf of your spouse that you believe is personally relevant to him/her. Your spouse will also complete an identical questionnaire with identical requirements.
- Questions pertain to memories you enjoy talking about and sensory cues (i.e., things you smell, hear, see, touch, feel, etc.) that help you recall those memories more vividly or help improve your quality of life (i.e., feel comfort, safe, happy, etc.).
- The expected duration of participation is one week to complete the questionnaire and a meeting at the conclusion of the study to discuss any differences in contribution of information by you and your spouse.
- It is recommended to keep the questionnaire on your person and to answer questions as they are recalled during your normal routine/schedule.
- Questionnaires will be returned separately to the Personal Investigator via in person, electronically, or individual self-addressed envelopes.
Appendix 2: (Continued)

- Questionnaires are required to be completed independently (with the exception of clarity/additional instructions by the Personal Investigator) and confidentially from other persons (especially the spouse). Failure to do so will result in disqualification from the study.
- The study will take place in the setting(s) and time(s) selected by you.

Total Number of Participants
About 5-10 couples (10-20 individuals) will take part in this study at USF.

Alternatives / Voluntary Participation / Withdrawal
You should only take part in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study. You are free to participate in this research or withdraw at any time. There will be no penalty or loss of benefits you are entitled to receive if you stop taking part in this study. If you are a student or employee at USF, decision to not participate will not affect your student status (course grade) or job status.

Benefits
The potential benefits of participating in this research study include:

- Discovering the extent to which your spouse is able to provide personally relevant information on your behalf.
- Discovering the extent to which you are able to provide personally relevant information on behalf of your spouse.
- Being motivated to document memories and sensory cues prior to the possibility of acquiring cognitive decline (should there be significant differences in content provision).

Risks or Discomfort
This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study.

Compensation
You will receive no payment or other compensation for taking part in this study.

Costs
It will not cost you anything to take part in the study.
Appendix 2: (Continued)

Conflict of Interest Statement

The University of South Florida, and/or any of its senior officials, do not have any potential conflict of interest related to this research.

Privacy and Confidentiality

We will keep your study records private and confidential. Certain people may need to see your study records. Anyone who looks at your records must keep them confidential. These individuals include:

- The research team, including the Principal Investigator and any other research staff.
- Certain government and university people who need to know more about the study, and individuals who provide oversight to ensure that we are doing the study in the right way.
- Any agency of the federal, state, or local government that regulates this research. This includes the Department of Health and Human Services (DHHS) and the Office for Human Research Protection (OHRP).
- The USF Institutional Review Board (IRB) and related staff who have oversight responsibilities for this study, including staff in USF Research Integrity and Compliance.

We may publish what we learn from this study. If we do, we will not include your name. We will not publish anything that would let people know who you are.

You can get the answers to your questions, concerns, or complaints

If you have any questions, concerns or complaints about this study, or experience an unanticipated problem, call Rebecca Allen at 727-501-3325.

If you have questions about your rights as a participant in this study, or have complaints, concerns or issues you want to discuss with someone outside the research, call the USF IRB at (813) 974-5638 or contact by email at RSCH-IRB@usf.edu.
Consent to Take Part in this Research Study

I freely give my consent to take part in this study. I understand that by signing this form I am agreeing to take part in research. I have received a copy of this form to take with me.

_____________________________________________  _______________
Signature of Person Taking Part in Study                    Date

________________________________________
Printed Name of Person Taking Part in Study

Statement of Person Obtaining Informed Consent

I have carefully explained to the person taking part in the study what he or she can expect from their participation. I confirm that this research subject speaks the language that was used to explain this research and is receiving an informed consent form in their primary language. This research subject has provided legally effective informed consent.

_____________________________________________  _______________
Signature of Person Obtaining Informed Consent                    Date

________________________________________
Printed Name of Person Obtaining Informed Consent
APPENDIX 3:

QUESTIONNAIRE

Husband/Wife # __
Person completing this questionnaire: Husband/Wife
(please circle)

Years Married: __________
Age: _______

This study aims to help people who, one day, may face dementia. If so, their communication will become limited and they will no longer be able to initiate a conversation or independently recall topics important to them. A tailored memory book, containing captioned photographs, will allow them to continue in meaningful conversations. Currently, someone other than the person with dementia (e.g., spouse, family member, and caregiver) creates the memory book. This modality is effective in eliciting and enhancing conversation, as supported in several studies (Bourgeois, 1991, Bourgeois, 1992, 1993; Bourgeois & Mason, 1996; McPherson, Furniss, Sdogati, Cesaroni, Tartaglini & Lindesay, 2001; Bourgeois, Dijkstra, Burgio, & Allen-Burge, 2009).

The question posed in this study is whether memory book content would be considerably different if provided directly by the person with dementia prior to cognitive decline. And, if so, would their own information promote better conversations? This is where your contribution can be beneficial to the cause. This study seeks to obtain information from individuals without cognitive decline in order to determine differences in content selection based on who provides it. Future studies will then include persons with dementia.

You and your spouse will independently complete questionnaires to provide memory book content for yourself and your spouse. The questionnaires are identical. In the first section, you will provide memories that are important to you. These are memories you will always want to remember and that you love to talk about, over and over again. You will even provide information that reminds you of those memories (e.g., what you smell, hear, see, feel, or touch). In the second section, you will provide information you believe your spouse would like in his/her memory book.
Appendix 3: (Continued)

The following requests are required for completion of the questionnaire:

1) Please provide authentic information, after careful consideration of your possibilities. You will have several days to complete the questionnaire during your normal routine, to assist you in this endeavor.

2) Please complete the questionnaire completely and independently. Failure to adhere to this request will result in disqualification from the study.

3) Please keep your information confidential (i.e., to not share with your spouse).

And finally... thank you for your participation. Your contribution may improve the quality of life for someone who will one day face cognitive decline. Perhaps someone you know.

Section I.

Part I: As Recipient: Please document ten memories that you would always like to remember. They can be memories from your childhood, teenage, or adult years. They can be something you did, someone you knew, something you experienced. They can be anything that is important to you.

In addition, think about anything that helps you think of those memories (i.e., something you smell, hear, see, or feel). Are you reminded when you hear a song played on the radio? Or, when you smell a particular scent? Maybe when feel the warmth of the sun? The options are limitless.

1. __________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
What reminds you of this memory? (i.e., something you see, hear, feel, or smell): __________
____________________________________________________________________________

2. __________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
What reminds you of this memory? (i.e., something you see, hear, feel, or smell): __________
____________________________________________________________________________
Appendix 3: (Continued)

3. ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   What reminds you of this memory? (i.e., something you see, hear, feel, or smell): _________
   ____________________________________________________________

4. ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   What reminds you of this memory? (i.e., something you see, hear, feel, or smell): _________
   ____________________________________________________________

5. ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   What reminds you of this memory? (i.e., something you see, hear, feel, or smell): _________
   ____________________________________________________________

6. ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   What reminds you of this memory? (i.e., something you see, hear, feel, or smell): _________
   ____________________________________________________________

7. ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________
   What reminds you of this memory? (i.e., something you see, hear, feel, or smell): _________
   ____________________________________________________________
Appendix 3: (Continued)

8. __________________________________________________________________________
____________________________________________________________________________
____________________
__________________________________________________________
What reminds you of this memory? (i.e., something you see, hear, feel, or smell): __________
____________________________________________________________________________

9. __________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
What reminds you of this memory? (i.e., something you see, hear, feel, or smell): __________
____________________________________________________________________________

10. __________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
What reminds you of this memory? (i.e., something you see, hear, feel, or smell): __________
____________________________________________________________________________

Part II. Some memories (or topics) are not pleasant to recall or talk about. Tell me anything you
DO NOT like to recall (or discuss) in conversation.

Examples:
- Specific event in your life.
- A person you know.
- A time in your life (childhood, military, stroke)
- A topic (politics, religion, animal abuse, gossip)
Part III. The earlier section focused directly on memory book content. This section, however, focuses directly on senses that improve (or enhance) a person’s life in the late-stages of dementia when a person is no longer able to communicate his/her wants and needs. For example, family members and staff may feel helpless when they do not know what comforts their loved one. As a result, the person with dementia may feel anxious or overwhelmed. On the contrary, if the person with dementia was able to provide information prior to cognitive decline, loved ones and staff can use those senses to evoke feelings of calmness, comfort, or joy, to name a few. This is where your contribution can be beneficial to the cause.

Instructions: Take a moment to reflect on subtle details that help you manage, or enrich, your daily life. Those details involve the use of your senses, which instantly allow you to feel an emotion and/or recall a memory. The senses may occur randomly or deliberately. It may be so intrinsic to your everyday routine that you never thought of sharing them with other individuals. More than likely, few people (if any) will know they exist. Provide an example to complete each sentence, and select all the senses that contributes to that experience. (Refer to the sample questionnaire for guidance.)

1. When I feel overwhelmed with my current situation,
   - the sight of ________________________________
   - the smell of ________________________________
   - the sound of ________________________________
   - the touch of ________________________________
   - the taste of ________________________________
   - the cool/warmth of ________________________________
   - gets me back to a place of controlling ease and relaxation.

Why? _____________________________________________________________
___________________________________________________________

[temperature]
2. When I am anxious
   - the sight of ________________________________
   - the smell of ________________________________
   - the sound of ________________________________
   - the touch of ________________________________
   - the taste of ________________________________
   - the cool/warmth of ________________________________
     [temperature]

   calms me.

Why? __________________________________________________________________________________________
______________________________________________________________________________________________

3. When I am feeling down (emotion),
   - the sight of ________________________________
   - the smell of ________________________________
   - the sound of ________________________________
   - the touch of ________________________________
   - the taste of ________________________________
   - the cool/warmth of ________________________________
     [temperature]

   helps me smile / puts me in better spirits.

Why? __________________________________________________________________________________________
______________________________________________________________________________________________

4. When I do not feel well (health), I
   - the sight of ________________________________
   - the smell of ________________________________
   - the sound of ________________________________
   - the touch of ________________________________
   - the taste of ________________________________
   - the cool/warmth of ________________________________
     [temperature]

   helps me feel better?

Why? __________________________________________________________________________________________
______________________________________________________________________________________________
Appendix 3: (Continued)

5. When I am lonely
☐ the sight of ____________________________________________
☐ the smell of ____________________________________________
☐ the sound of ____________________________________________
☐ the touch of ____________________________________________
☐ the taste of ____________________________________________
☐ the cool/warmth of _______________________________________
[temperature]

comforts me.

Why? ____________________________________________________
______________________________________________________________________________
______________________________________________________________________________

<table>
<thead>
<tr>
<th>Something you...</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smell</td>
<td>pine straw baking in the sun, flowers blooming, perfume/cologne, baked cookies, jasmine, freshly-cut wood, detergent, tires/rubber, crayons, barbeque grill</td>
</tr>
</tbody>
</table>
| Song/Music       | Song: “You’re Something Special” by the Gap Band  
Album: “Handel’s Messiah, A Soulful Celebration,” by various artists  
Music (in general): Polka music, Beethoven, rock’n roll, country music |
| Hear (non-music sounds) | sounds of a blue jay, waves at the beach, construction, traffic, crickets, crowds, typewriter |
| See              | Action: children playing, flowers blooming, seagulls flying, ducks waddling  
Locations: a dock, the beach, the park, outdoors, a library, a kitchen  
Objects: fine art, figurines, books, gardens, sports |
| Feel/Touch       | being held tightly/comforted, holding hands, pet on the lap, warmth of the sun, mist from the beach, cool climate, head rubbed, hair stroked, blankets on legs |
| Taste            | Cookies baking, sweet tea, coffee, turkey baking, BBQ, Italian food |
Appendix 3: (Continued)

Section II.

Part I. As Informant. Please provide information for your spouse’s memory book. Complete the following on behalf of your spouse, as you did in Section I for yourself. (Refer to Section I for directions, if needed.)

1. __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
   What reminds your spouse of this memory? (i.e., something he/she may see, hear, feel, or smell): __________________________________________________________________________
   __________________________________________________________________________

2. __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
   What reminds your spouse of this memory? (i.e., something he/she may see, hear, feel, or smell): __________________________________________________________________________
   __________________________________________________________________________

3. __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
   What reminds your spouse of this memory? (i.e., something he/she may see, hear, feel, or smell): __________________________________________________________________________
Appendix 3: (Continued)

4. ____________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

What reminds your spouse of this memory? (i.e., something he/she may see, hear, feel, or smell):
______________________________________________________________________________
______________________________________________________________________________

5. ____________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

What reminds your spouse of this memory? (i.e., something he/she may see, hear, feel, or smell):
______________________________________________________________________________
______________________________________________________________________________

6. ____________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

What reminds your spouse of this memory? (i.e., something he/she may see, hear, feel, or smell):
______________________________________________________________________________
______________________________________________________________________________

7. ____________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

What reminds your spouse of this memory? (i.e., something he/she may see, hear, feel, or smell):
______________________________________________________________________________
______________________________________________________________________________
Appendix 3: (Continued)

8. __________________________________________________________________________
   __________________________________________________________________________
What reminds your spouse of this memory? (i.e., something he/she may see, hear, feel, or smell):
   __________________________________________________________________________
   __________________________________________________________________________

9. __________________________________________________________________________
   __________________________________________________________________________
What reminds your spouse of this memory? (i.e., something he/she may see, hear, feel, or smell):
   __________________________________________________________________________
   __________________________________________________________________________

10. __________________________________________________________________________
    __________________________________________________________________________
What reminds your spouse of this memory? (i.e., something he/she may see, hear, feel, or smell):
    __________________________________________________________________________
    __________________________________________________________________________
Appendix 3: (Continued)

**Part II. Please provide information on behalf of your spouse.** Some memories (or topics) are not pleasant to recall or talk about. Tell me anything your spouse DOES NOT like to recall (or discuss) in conversation.

Examples:
- Specific event in his/her life.
- A person he/she knows.
- A time in his/her life (childhood, military, stroke)
- A topic (politics, religion, animal abuse, gossip)

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

**Part III. Please provide information on behalf of your spouse.**

**Directions:** Complete the following on behalf of your spouse as did in Section I for yourself. (Refer to Section I for directions, if needed.)

1. **When your spouse feels overwhelmed with his/her current situation,**
   - [ ] the sight of ___________________________________________
   - [ ] the smell of ___________________________________________
   - [ ] the sound of ___________________________________________
   - [ ] the touch of ___________________________________________
   - [ ] the taste of ___________________________________________
   - [ ] the cool/warmth of ____________________________
     [temperature]

   gets him/her back to a place of controlling ease and relaxation.

   Why? __________________________________________________________
   _____________________________________________________________
   _____________________________________________________________
## Appendix 3: (Continued)

2. **When your spouse is anxious**
   - □ the sight of ____________________________
   - □ the smell of ____________________________
   - □ the sound of ____________________________
   - □ the touch of ____________________________
   - □ the taste of ____________________________
   - □ the cool/warmth of ______________________

   [temperature]

   calms him/her.

   Why? ____________________________________________________________________________  
   ____________________________________________________________________________

3. **When your spouse is feeling down (emotion),**
   - □ the sight of ____________________________
   - □ the smell of ____________________________
   - □ the sound of ____________________________
   - □ the touch of ____________________________
   - □ the taste of ____________________________
   - □ the cool/warmth of ______________________

   [temperature]

   helps him/her smile (puts me in better spirits).

   Why? ____________________________________________________________________________  
   ____________________________________________________________________________

4. **When your spouse does not feel well (health),**
   - □ the sight of ____________________________
   - □ the smell of ____________________________
   - □ the sound of ____________________________
   - □ the touch of ____________________________
   - □ the taste of ____________________________
   - □ the cool/warmth of ______________________

   [temperature]

   helps him/her feel better?

   Why? ____________________________________________________________________________  
   ____________________________________________________________________________
Appendix 3: (Continued)

5. **When your spouse is lonely**
   - the sight of ______________________________________
   - the smell of ______________________________________
   - the sound of ______________________________________
   - the touch of ______________________________________
   - the taste of ______________________________________
   - the cool/warmth of ________________________________

   [temperature]

   **comforts him/her.**

   Why? __________________________________________________
   ________________________________________________________