

Understanding the Layperson's Perception of Prayer: A Prototype Analysis of Prayer

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The objective of the current studies was to utilize prototype analysis to foster a better understanding of lay concepts of prayer. In four studies, we found evidence that concepts of prayer are indeed prototypically organized. In Study 1, participants listed features of prayer. In Study 2, participants reliably rated the centrality of these features. In Study 3, participants perceived behaviors described in a scenario as better characterizing prayer when central, as opposed to peripheral, features were used in the description. In Study 4, participants remembered, both correctly and falsely, more central than peripheral features in a narrative describing the use of prayer. The practical implications of these results are discussed.

Keywords: prototype, prayer, layperson, perception

Prayer is a form of spiritual activity common to all the “Abrahamic” traditions (i.e., Judaism, Christianity, and Islam) and has strong parallels in other religious traditions (e.g., Buddhism, Hinduism, Shinto). In light of its central role in so many religious traditions, prayer is a spiritual activity worthy of empirical investigation. In fact, survey research indicates that around 90% of Americans pray at least occasionally (McCullough & Larson, 1999) and many people use prayer spontaneously to cope with their problems (Barnes, Powell-Griner, McFann, & Nahin, et al. 2004; McCaffrey et al., 2004). There is some evidence that spiritual involvement or activity may have positive effects on physical and mental health. For example, a recent review of clinical trials that examine the effects of Western religious activity and spirituality on health concluded that religious activities benefit blood pressure, immune function, depression, and

mortality (Townsend, Kladder, Ayele, & Mulligan, 2002, but see Sloan, 2006, for cautionary notes).

Prayer has also been shown to impact relationships. In one recent study (Fincham, Beach, Lambert, Stillman, & Braithwaite, 2008) cross-sectional and longitudinal relationships were documented between prayer for partner and relationship satisfaction. In addition, some experimental journal studies have been conducted in which participants were instructed to pray for their romantic partner every day for 4 weeks. At the end of this period, those who prayed for their partner were more willing to forgive their partner (Lambert, Fincham, Stillman, Graham, & Beach, in press) and reported lower levels of infidelity (Fincham, Lambert, & Beach, 2010) than those who prayed in general or those who thought daily positive thoughts about their partner. Furthermore, Dudley and Kosinski (1990) have suggested that spiritual activities like prayer may help couples to more often “think of the needs of others, be more loving and forgiving, treat each other with respect, and resolve conflict” (p. 82). This was the case for couples in a recent qualitative study who reported that prayer alleviated tension and facilitated open communication during conflict situations (Lambert & Dollahite, 2006). Indeed, there is also some empirical evidence to suggest that prayer invokes an experience of relationship with God that is related to diffused hostile emotions, decreased emotional reactivity, increased couple

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empathy, increased self-change focus, and encouragement for couple responsibility for reconciliation and problem solving (Butler, Stout, & Gardner, 2002).

Usefulness of Ascertaining the Layperson Perspective

There are numerous practical and theoretical considerations that make it important to understand how laypersons conceive of prayer. With the recent increase in research on prayer, there is likely to be a proliferation of new and refined measures of the construct. Understanding lay concepts of prayer could facilitate the creation or refinement of such measures. Also, given that the vast majority of research on prayer is based on self-reports, understanding lay concepts of prayer is important for accurate interpretation of this body of work.

At a practical or applied level, there are also important implications. For instance, Beach, Fincham, Hurt, McNair, and Stanley (2008) argue that prayer could fruitfully be applied in psychotherapy. However, in order to maximize this potential, it is critical to determine if there are aspects of prayer that people find negative in order to avoid iatrogenic effects. Not all forms of prayer may be beneficial. Indeed, it is possible that some forms of prayer, or prayer with certain foci, might be harmful for some physical or relationship outcomes. For example, some individuals might rely on prayer to remedy physical illnesses rather than visit a doctor. Or prayer could be used to manipulate others or induce guilt. Finally, prayer may focus on the partner in a manner that increases blame and vilification directed toward the other. It therefore behooves researchers to be clear about how the layperson conceives of prayer as they begin to study its effects on physical, mental, and relational health.

The Prototype Approach

One effective method of assessing the lay perspective is a prototype approach. Prototype theory has challenged the classical view of concepts. The classical view is that category membership is determined by necessary and sufficient conditions, suggesting that a case either is or is not a category member. One implication of this clas-

sical approach is that all members of a category are equally representative of that category. Rosch (1975) suggested that many natural language categories do not conform to this classical view. Instead, she proposed that concepts resemble a prototype—a fuzzy collection of features that determine category membership by possession of many central features of the prototype. Category membership is determined by the extent to which an item resembles the object or by an experience that best represents the category—a prototype. Rosch further argues that two conditions must be met for a concept to display a prototype structure. First, people must be able to identify features of the concept and be able to reliably rate their centrality to the concept. Second, the centrality of a given feature should affect how one thinks about the relevant concept (Rosch, 1975).

Rosch's approach has been used to study concepts important in social psychology, such as emotion (Fehr & Russell, 1984; Fehr, Russell, & Ward, 1982), love (Fehr, 1988; Fehr & Russell, 1991; Fehr, 1994), forgiveness (Kearns & Fincham, 2004), gratitude (Lambert, Graham, & Fincham, 2009), and intimacy in same-sex interactions (Fehr, 2004). In each case, it has been shown that the concept is better characterized by the prototype approach than by the classical view of category membership. Thus, we anticipated that the prototype approach would be an appropriate method for examining lay concepts of prayer.

Overview

The primary purpose of the current studies was to explore how the layperson perceives the construct of prayer. We began in Study 1 by obtaining a listing of features that laypersons associate with prayer. In Study 2, we assessed the perceived centrality of each of these attributes by having another group of participants rate each individual feature. We then hypothesized that feature centrality would influence the way in which prayer was thought about, and, in Studies 3 and 4, we tested this hypothesis. In Study 3, we tested whether using central versus peripheral words in a scenario would affect participants' perceptions regarding how the described behavior of the hypothetical person matched their concept of prayer. In Study 4, we examined whether using central versus peripheral features would affect recall of phrases used in a narrative.

Study 1: Compilation of Prototypic Prayer Features

A typical approach used in prototype studies (e.g., Fehr, 1988; Fehr & Russell, 1984) is to first compile a list of features that individuals see as describing the construct. This was the sole purpose of Study 1. To accomplish this objective, in a free-response format, participants were asked to list features they perceived as being related to prayer.

Methods

Participants. Participants were 73 undergraduate students (60 female) from a large, public university in the U.S. Southeast participating in the study in exchange for partial course credit. Participants ranged in age from 17 to 33, with a median age of 19. Although denomination information was not gathered from this particular sample, subsequent data gathered from participants drawn from this introductory class indicates that participants were around 3% Jewish, 21% Protestant, 31% Catholic, 1% Mormon, and 42% “other” (most of which were likely some form of protestant but prefer a different label, such as Baptist, for example). All the samples were drawn from this course (across several different semesters, as each sample was independent).

Procedure. Participants were given the following instructions (adapted from Fehr & Russell, 1984, Study 6):

This is a study on the characteristics and attributes that people think of when they think of the word prayer. For example, if you were asked to list the characteristics of the word house, you might write: place where you live, shelter, roof, yard. In the current study, we are not interested in attributes of houses but in attributes of prayer. Imagine that you are explaining the word prayer to someone who has no prior knowledge of the word. Include the obvious. However, try not to just free-associate. We're interested in what is common in people's conceptions of prayer. There are no right or wrong responses and the attributes you generate may be either positive or negative.

Results and Discussion

A verbatim list of all the features that were generated by participants was compiled. These characteristics of prayer were then grouped into larger categories through a procedure used by

Fehr (1988), adapted from one used by Rosenberg and Jones (1972) and Rosenberg and Sedlak (1972). The first step was to extract all monolexemic items, such as *faith* or *peace*, which were easily identified as distinctive features of prayer. In some cases, a participant would use a phrase that necessitated judging whether the phrase contained one or more distinctive linguistic units (features). Attributes that were preceded by modifiers or descriptive phrases were coded as a single attribute (e.g., very caring). The total number of linguistic units extracted through this process was 901.

The next step was to place linguistic units into attribute categories. Two research assistants independently assigned each of the 901 features into these attribute categories. Linguistic units were judged to be in the same category if they were (1) different grammatical forms of the same word, (2) were modified by adjectives or adverbs, such as very or slightly, or if they were (3) judged to be similar or identical in meaning. Throughout this process, coders attempted to be conservative to allow for unique concepts to be represented; however, they also sought to eliminate redundant words or phrases. For example, “willingness to sacrifice your own self” was collapsed into the category *selfless*. Interrater reliability was tested by computing percentage of agreement, which was high between the three judges at 92%. This coding procedure resulted in a total of 232 prayer attributes. Of these attributes, 157 were listed by two or fewer participants. Examples of such items were *fake*, *choir*, and *worried*. These responses were removed leaving a total of 74 prayer features (see Table 1).

Study 2: Centrality Ratings of Prayer Features

In order to demonstrate that a concept is characterized by a prototypical structure, individuals must be able to indicate which features are more central or more peripheral to the concept. If a concept truly has a prototypical structure, raters should exhibit considerable agreement with one another in their centrality ratings. We therefore conducted Study 2 to determine the level of agreement among participants about the centrality of the features generated in Study 1.

Table 1
Central Prayer Features in Order of Centrality

Central features	Study 1		Study 2	
	% of participants	Positivity	Centrality	SD
God	47.89	6.45	7.14	1.62
Can be done anytime	4.42	6.27	7	1.62
Thanking God	30.97	6.35	6.98	1.74
Talking to God	47.79	6.36	6.93	1.76
Connection with God	14.16	6.33	6.84	1.77
Love	15.70	6.40	6.75	1.67
Relationships with God	17.58	6.31	6.74	1.83
Family	5.31	6.40	6.73	1.48
Faith	20.35	6.24	6.72	1.79
Important	5.31	5.89	6.67	1.55
Jesus	7.08	6.25	6.66	1.95
Hope	23.89	6.35	6.65	1.67
Health/well-being	2.65	6.15	6.63	1.75
Higher Power	10.61	5.75	6.63	1.64
Guidance	8.85	6.16	6.53	1.61
Healing	4.42	6.09	6.53	1.84
Peace	13.27	6.16	6.49	1.55
Personal	11.50	5.80	6.49	1.70
Caring	4.42	6.22	6.47	1.51
Heart	3.54	6.11	6.47	1.75
Holy	3.54	5.80	6.47	1.70
Happiness/joy	6.19	6.22	6.44	1.79
Strength	8.85	5.91	6.40	1.55
Openness	7.69	5.95	6.39	1.81
Done for others	15.04	6.05	6.37	1.75
Help	23.89	5.89	6.35	1.85
Patience	2.65	5.93	6.35	1.81
Spiritual	12.39	6.06	6.33	1.68
Worship	7.08	6.07	6.23	2.17
Praise	7.08	5.61	6.21	2.01
Understanding	3.54	5.71	6.21	1.83
Forgiveness	30.97	5.98	6.19	1.88
Comfort	9.73	5.94	6.16	1.74
Reflection	16.81	5.89	6.15	1.70
Blessings	7.08	5.98	6.14	1.82
Listening	4.42	6.07	6.12	1.95
Safety/protection	6.19	5.89	6.02	1.90

Note. Reported standard deviations were based on centrality ratings.

Methods

Participants. Participants were 57 undergraduates (44 female) from a large, public university in the U.S. Southeast participating in the study in exchange for partial course credit. Participants ranged in age from 18 to 75, with a median age of 19.

Procedure. Study participants were given the following instructions:

In a previous study, we asked people to tell us their views of prayer. Specifically, we asked them to “list the

characteristics or attributes of prayer that come to mind.” Below are the responses of some of the people in our earlier study. Please read each of the descriptions of prayer below. After you have read each one, please rate how central or important you think each of the features are to the concept of prayer.

Study participants then rated how central each of the 74 features was to their concept of prayer using a scale that ranged from 1 to 8. To ensure that the order of presentation did not affect ratings, features were presented in alphabetical order and the 74 features were

presented in reverse alphabetical order for half of the participants. They also rated how positive or negative the feature was on an 8-point scale (1 = very negative to 8 = very positive).

Results

Mean centrality and valence ratings for the 74 features are listed in Table 1 and 2. Two indices provided evidence for the reliability of these means. First, the intraclass correlation coefficient was computed, which is equivalent to the mean of all possible split-half correlations of the 57 judges with respect to the 74 features (ICC = .98, $p < .001$). Further analyses, based on a flipped data matrix and treating the 74 features as cases and the 57 participants as items, show that the internal consistency of the ratings is exceptionally high ($\alpha = .96$).

There was a moderate correlation between the frequency with which participants mentioned specific features in Study 1 and how central participants of Study 2 rated the features ($r = .34$, $p < .01$). The correlation between Study 2 participants' rating of the centrality and valence of features was exceptionally high ($r = .94$, $p < .01$), suggesting that, at least for the construct of prayer, feature valence and centrality are relatively interchangeable and perhaps may not be distinguished one from another. In general, prayer concepts were primarily rated positively ($M = 5.54$, $SD = .71$). In fact, 81% of features received an average rating of 5 (out of 8). Some examples of the most positive items included *God*, *family*, and *love*. Some of the most negative items included *venting*, *time consuming*, and *problems/trials*.

Discussion

It is noteworthy that participants considered some features to be more prototypical of prayer than others and exhibited a high level of agreement on these ratings. The fact that participants found this to be a meaningful task fulfills the first criterion for demonstrating that a concept is prototypically organized. Another important finding was that feature centrality was associated with how positively participants viewed each feature. This suggests that, for this sample, positive features are considered to be more rep-

resentative of prayer than negative ones. Also, given the extremely high correlation between feature valence and centrality, it may be that participants' viewed the terms as synonymous, or perhaps it is a reflection of participants completing the valence directly after the centrality. Finally, consistent with results from other prototype analyses, the correlation between frequency and centrality was moderate (e.g., Fehr & Russell, 1984). This finding seems to indicate that perhaps the most readily recalled features are not necessarily the most central.

Study 3: Feature Centrality and Perceptions of Prayer

The central purpose of Study 3 was to determine whether feature centrality influences cognition about prayer. Specifically, in this study, we tested whether the centrality of words used in describing a prayer experience influenced participants' perception of how closely the experience resembled prayer. We hypothesized that if central features were more representative of prayer than are peripheral ones, participants would perceive that a person experienced more prayer when their situation was described using central as opposed to peripheral features.

Methods

Participants. Study participants were 245 undergraduates (185 female) from a large, public university in the U.S. Southeast participating in exchange for partial course credit. Participants ranged in age from 18 to 54, with a median age of 19.

Procedure. We conducted a median split of the centrality ratings to divide traits into central and peripheral traits. Although necessary for present purposes, we acknowledge that such a division is artificial and that trait centrality falls along a continuum.

Participants were randomly assigned to condition and read two scenarios (one at a time), one of which described a prayer experience using only central words with a character named Rebecca, and another that included only peripheral words in describing a prayer experience with a character named Jim (see Appendix A). These were counterbalanced so that the Rebecca experience was cen-

Table 2
Peripheral Prayer Features in Order of Centrality

Peripheral features	Study 1		Study 2	
	% of participants	Positivity	Centrality	SD
Friend	3.54	5.95	5.81	1.89
Problems/trials	8.85	4.62	5.81	1.85
Focus	2.65	5.41	5.75	2.10
Relaxing	6.19	5.56	5.74	1.89
Confession	10.62	5.39	5.66	2.18
Devotion	2.65	5.71	5.57	2.15
Relief	7.08	5.38	5.49	1.93
Stress relief	2.65	5.38	5.49	2.14
Needs	2.65	4.87	5.46	1.81
Quiet	5.31	5.28	5.46	2.12
Reverence	2.65	5.40	5.45	2.11
Religion	19.47	5.33	5.44	1.97
Freedom	3.54	5.69	5.37	1.99
Revelation	2.65	5.29	5.33	1.92
Success	2.65	5.40	5.32	2.13
Before bedtime	6.19	5.39	5.30	2.24
Bible	2.65	5.45	5.25	2.51
Expression	4.42	5.40	5.18	2.03
Meditation	6.19	5.24	5.11	1.96
Church	12.39	5.25	5.07	2.44
Daily	7.08	5.51	5.07	2.40
Wants/wishes	18.58	4.65	5.05	2.11
Answers	8.85	5.13	5.02	2.15
Requests	46.90	4.64	4.95	1.84
Question	2.65	4.91	4.93	1.90
Power	2.65	4.56	4.91	2.30
Before meals	8.85	5.16	4.81	2.31
Solitude	5.31	5.06	4.81	2.15
Dream	5.31	5.16	4.65	1.93
Venting	3.54	4.09	4.54	2.08
Time	15.04	4.67	4.39	2.29
Mary	2.65	4.65	4.00	2.35
Begging/pleading	4.42	3.50	3.51	2.14
Kneeling	3.54	4.16	3.50	2.30
Folded hands	2.65	3.98	3.33	2.12
Time-consuming	3.54	3.44	3.09	2.06
Aloud	3.54	4.02	3.04	2.15

Note. Reported standard deviations were based on centrality ratings.

tral for half of the participants and peripheral for the other half of participants. Participants were then asked to rate how closely each prayer experience matched their concept of prayer using a 10-point scale (ranging from “not at all” to “very much”). To ensure that the centrality of the words used, rather than the content of the scenario, accounted for any potential variance between conditions, the scenarios were counterbalanced so that each prayer experience contained central words for one condition’s participants and peripheral words for the other condition of participants.

Results

Perceptions of prayer. To assess the impact of feature centrality on participants’ perceptions of how much prayer a hypothetical individual was experiencing, we used the general linear model (GLM) factorial procedure with repeated measures. Centrality (central vs. peripheral) was entered as a within-subjects factor, and sex (male or female) was entered as a between-subjects factor. Because sex did not significantly interact with centrality or significantly impact significance levels for either

hypothesis, it was dropped from the analysis presented. Also, inasmuch as two separate scenarios were presented, we checked for mean differences in scores on the two scenarios, and the mean scores differed significantly. Therefore, we included this as a between-subjects factor and it did not significantly alter the results. Thus, it was dropped from the analysis presented here.

As anticipated, a significant main effect for centrality was obtained, $F(1, 244) = 42.77, p < .001, \eta_p^2 = .15$. Using a 10-point scale, the scenarios containing central words received an average prayer rating of 5.75, and scenarios containing peripheral words received an average prayer rating of 4.96.

Discussion

These findings provide support for our hypothesis that the prototype structure of prayer affects cognition. Specifically, when participants read a narrative that describes a prayer experience using central prayer words, as opposed to peripheral prayer words, they rated the experience of the target of the narrative as more closely matching their concept of prayer.

Study 4: Recognition Memory for a Prayer Narrative

We sought to obtain additional evidence for our hypothesis that feature centrality affects cognition. In this study, we hypothesized that the prototypic structure of prayer affects performance on memory recognition tasks related to this construct. The activation of a prototype should result in features closely related to that prototype being more easily accessible in memory than those features that are more peripheral in nature (Cantor & Mischel, 1977). Thus, the purpose of Study 4 was to determine whether participants would remember more central than peripheral features from a prayer narrative (both falsely and correctly).

Methods

Participants. Participants were 48 undergraduates (40 female) from a large, public university in the U.S. Southeast participating in exchange for partial course credit. Participants

ranged in age from 18 to 25, with a median age of 19.

Procedure. Participants read a narrative describing the study abroad experience of a college woman that contained three separate instances of experienced prayer (see Appendix B). Participants were instructed that they would be asked questions about the narrative later in the experiment. Within the narrative, we incorporated six central and six peripheral prayer features. We chose a variety of features so that their average centrality would be representative of their category but would also make sense in the context of the narrative. The average centrality ratings of the central and peripheral features were 6.54 and 4.90, respectively.

Participants then engaged in an interference activity in which they were asked to write a short paragraph about their daily routine and three things they normally eat in a typical day. They were then asked to write two sentences about what they do during a typical morning, a typical afternoon, and a typical evening.

Next, participants completed the recognition task. They were asked to indicate whether various events had occurred in the prayer narrative (e.g., “After being robbed, Rachel prayed for revelation in reclaiming her valuables.”). The events consisted of the 12 prayer features that had been presented in the narrative (6 central, 6 peripheral) as well as 12 prayer features that had not been presented (6 central, 6 peripheral). Participants were instructed to indicate “yes” if they believed that the event had occurred or to indicate “no” if they believed that the event had not occurred.

Results

To assess the impact of feature centrality on participants’ perceptions of the narrative, we used the general linear model (GLM) factorial procedure with repeated measures. Our first prediction was that for the presented items, central features would be correctly recognized more often than peripheral features. As anticipated, a significant main effect for attribute centrality was obtained, $F(1, 45) = 21.72, p < .001, \eta_p^2 = .177$. An average of 75% of the six central features were correctly recognized, compared with only 65% of the peripheral features. Our second hypothesis was that participants would be more likely to falsely recognize central fea-

tures that were not presented than they would be to falsely recognize peripheral features that were not presented. Consistent with this prediction, we obtained a main effect for attribute centrality, $F(1, 45) = 69.55, p < .001, \eta_p^2 = .61$. An average of 24% of central features were falsely recognized, compared with only 10% of peripheral features.

Discussion

As in Study 3, we found that the centrality of prayer features was important, as it affected memory of a prayer narrative. Participants correctly recognized significantly more central than peripheral features. In addition, participants also falsely recognized features that were not presented but were highly central to prayer, which offers additional support for our hypothesis that central features would be more salient in memory than peripheral features.

General Discussion

We conducted four studies using prototype analysis to foster a better understanding of lay concepts of prayer. In Study 1, participants were able to identify features of prayer, and the participants of Study 2 reliably rated the centrality of the identified prayer features. In Studies 3 and 4, we sought to determine whether feature centrality would affect cognition. In Study 3, we found that using central versus peripheral words affected participants' rating of a prayer scenario, and in Study 4, we found that in a narrative describing situations that involved prayer, central features were both correctly and incorrectly recalled with a higher frequency than were peripheral features. The findings of these two studies indicate that centrality of prayer features did affect cognition about the concept and therefore demonstrate a prototype structure. These findings are also good illustrations of how the layperson conceives of prayer.

Why Does Prayer Matter?

Prayer and its relationship to health and well-being has been investigated using qualitative and quantitative designs. Several studies noted moderately positive correlations between prayer and indicators of physical health and hardiness, existential well-being, and meaning in life

(Poloma & Pendleton, 1991). Carlson, Bacaseta, and Simanton (1988) found that prayer, specifically devotional meditation, had a positive effect on psychological symptoms of anxiety and anger in college students. Prayer may often result in feelings of inner peace, of relief, and of power and support, and the resulting psychological effects can subsequently influence physical health (Banzinger, Van Uden, & Janssen, 2008). Furthermore, McCullough and Larson (1999) noted that prayer is in fact more likely to be used as a coping resource when problems are more severe, chronic, or unresponsive to other treatments or interventions. Some experimental research has shown that participants randomly assigned to pray increased in gratitude at the end of a 4-week period (Lambert, Fincham, Braithwaite, Graham, & Beach, in press). Although some of these results could be spurred on by dissonance reduction, by identifying these and other features of prayer, we can better understand its potential positive effects and what it can do to help individuals. Otherwise stated, future research could utilize prototype studies of prayer to attain a more nuanced understanding of how layperson's beliefs are connected to such outcomes.

Our findings may shed some light on why prayer may contribute to such outcomes. For example, social support is an important contributor to psychological well-being (Canty-Mitchell & Zimet, 2000). The top 10 most central features included eight features that could be related to support, including "talking to God," "connection with God," "love," "relationship with God," "thanking God," "family," and "can be done anytime." These highly central features show that those in our sample perceived of God as someone they could talk to any time—someone with who they could have a relationship or special connection. This may be part of the reason for the empirical relationships that we found; however, this needs to be further teased out by future research.

Implications for Practitioners

Recent research has begun to explore the effect of prayer on relationships. For example, one set of studies demonstrated that prayer for the partner predicted relationship satisfaction 6 weeks later but not vice versa (Fincham, Beach,

Lambert, Stillman, & Braithwaite, 2008). Other experimental research has shown that praying can increase one's propensity to forgive a relationship partner (Lambert, Fincham, Beach, Stillman, & Graham, 2010) or engage less frequently in extradyadic sexual behavior (Fincham, Lambert, & Beach, 2009). Beach, Fincham, Hurt, McNair, & Stanley (2008) recently provided a conceptual framework in which they argue that prayer for a relationship partner can function in ways that are consistent with the aims of traditional skills-based interventions with couples. For example, they suggest that the time-out used in couples' counseling might be enhanced by prayer for couples who profess a faith and believe in prayer. The findings of our studies could be used by clinicians to better understand what features of prayer are central to the layperson's understanding of prayer. This could be helpful for clinicians to more effectively communicate with their religious clients about prayer, especially in such cases when the clinician does not have a religious background.

Limitations and Future Directions

The current prototype analysis was conducted on a largely Christian sample of college students. It could be that more diverse populations or samples of older adults may perceive prayer differently from the samples utilized in the studies reported here. Future research might examine whether the lay concepts of prayer would be constant across diverse samples. The majority of the features generated by our study participants were positive. Future research should expand upon current research to determine other potential salutary effects of prayer.

Conclusion

Overall, the findings of this research illustrate the lay concepts of prayer. These studies are important because they help us understand more about a prevalent human practice that is linked to several important outcomes. According to Hill and Pargament (2008), researchers studying religion in psychology have reported that religions are complex variables involving cognitive, emotional, behavioral, interpersonal, and physiological dimensions. Thus, it is important to be able to understand these variables, such as prayer, in order to better understand ourselves and our world.

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Appendix A

Central and Peripheral Scenarios

Condition 1

Central

After a long day on campus, Rebecca wanted to *talk*. She felt like she would like to have more *guidance* in her life. She began by giving *thanks* for her *family*. Then, she asked for *forgiveness*. Afterwards, she felt a feeling of *peace*.

Peripheral

After a long day on campus, Rebecca wanted to *vent*. She felt like she would like to have more *answers* for her life. She began by

pleading for *stress relief*. Then, she asked some *questions*. Afterwards, she felt a feeling of *reverence*.

Condition 2

Central

Jim was under a lot of pressure, and he felt like he needed to do something to get him through the week. Seeking *connection* and focusing on both his *personal* concerns and *the needs of others* he began. His *faith* and *family* taught him the type of conversation he could have.

(Appendices continue)

Peripheral

Jim was under a lot of pressure, and he felt like he needed to do something to get him

through the week. Seeking *solitude* and then focusing on both his *needs* and *wants* he began. His *religion* and the *Bible* taught him the types of *requests* he could make.

Appendix B

Central and Peripheral Narrative

Rachel was far away from home living in France as a foreign exchange student for a semester abroad. Although she thought she would have a great time, it didn't quite pan out that way. During the first month of her absence she was extremely homesick and it was difficult to be so far away from her parents. She had never been more than an hour's drive away and now she was separated by the Atlantic Ocean and there were no weekend trips home. When she got especially lonely she would talk to God (C) and would vent (P) to him. Doing so would bring her joy (C) and reverence (P).

By the time Rachel began getting over being homesick, she encountered another challenge. As she walked the streets of Paris one evening, a few Gypsy children approached her, begging for any coins she could spare. She looked down into her purse and the next thing she knew she was on the ground and had everything of any value stripped off her—her watch, her jewelry,

her purse, everything gone. Once she had regained her composure, she bowed her head and asked for guidance (C) in reclaiming her valuables, for the power (P) necessary to deal with this challenge, and to forgive (C) those who had done this. She felt like she received answers (P).

Finally, during her last month in France her roommate got some kind of parasite and was deathly ill. Rachel spent most of her leisure time by her bedside, and oftentimes she would pray for her health and well-being (C), and that she would be relieved (P) of her illness. She thought that perhaps Mary (P) would intervene on her roommate's behalf. Her roommate did get better and Rachel felt peaceful (C). After all these unforeseen difficulties of her trip, Rachel couldn't have been happier to return back to America.

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