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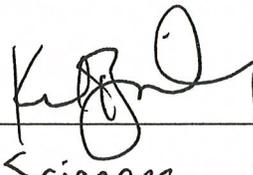
Imagery, Prayer, and Mind Wandering: Kataphatic Prayer

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Abstract

Mind wandering—reduced attention to external events—during prayer could pose a problem for Christians. However, different types of prayer make different cognitive demands. *Kataphatic prayer*, a common type of evangelical Christian prayer, makes use of mental imagery in hopes of experiencing God in a richer sense. Because both mind wandering and kataphatic prayer require imagery, tying up imagery resources in kataphatic prayer should block mind wandering thereby improving focus. Participants in this study prayed as they normally do, viewed a visual task, or engaged in kataphatic prayer while self-monitoring for mind wandering.

Imagery, Prayer, and Mind Wandering: Kataphatic Prayer

Can having petitioners engage in kataphatic prayer block or at least reduce mind wandering? A common problem that people face during prayer is mind wandering. Mind wandering, involves reduced attention to external events (e.g. imagery; Smallwood, Beach, Schooler & Handy, 2008). Like all mental processes it is rooted in the brain. When participants take a break from the target tasks in neuroimaging experiments, there is a particular neural network that is still firing (Gusnard et al., 2001). This network, which includes several parts of the brain such as the prefrontal cortex and parietal regions, is called the default mode network and is thought to be involved in mind wandering (Hasenkamp, Wilson-Mendenhall, Duncan, & Barsalou, 2012). This conclusion is not far fetched considering that this network is active when people are not doing or focusing on a task. The effects of mind wandering can be detrimental to a person performing a task such as driving or studying.

Mind wandering during prayer could pose a huge problem for Christians because those who engage in mind wandering while reading demonstrate a lower comprehension of the text they just read (McVay & Kane, 2012). McVay and Kane's experiment consisted of several tasks in which the participants were interrupted with a thought probe that was meant to stimulate mind wandering. In one condition where Tolstoy's *War and Peace* was read on the computer, the question "what are you thinking about?" appeared on the screen along with answers such as "the text" or "something in the future". The participants would respond by pressing the number that corresponded with the answer they chose. In this, it was found that the mind wandering probe hindered the participants' ability to grasp what they read. As unfavorable to tasks as mind wandering is, it is not an isolated phenomenon that only a few people do. In an experiment performed by Risko, Anderson, Sarwal, Engelhardt & Kingstone (2012) showed how often

people engaged in mind wandering. In one condition, participants were made to watch a one-hour lecture on psychology, economics, or classics. In the middle of the lecture a prompt would appear on the screen inquiring if the participants were mind wandering and after responses were given the lecture resumed. In the first half of the lecture there was a reported 30% of people mind wandering and during the second half participants then reported that mind wandering increased to 49%. When given a test over the lecture, participants overall answered 58% of the questions correctly. This sort of inattention is not beneficial to the petitioner who wishes to draw closer to or hear the voice of God.

Mind wandering involves a reduction in perception. One theory of mind wandering regards mind wandering as a cyclic activity with two processes-- perceptual decoupling and meta-awareness (Schooler et al., 2011). Meta-awareness is being able to precisely notice of current consciousness. The second process includes perception; more specifically the ability to uncouple attention from perception (this is also know as perceptual decoupling) When mind wandering occurs, our minds drift from what we perceive, such as prayer, to inner thoughts. This problem may be curtailed by changing the type of prayer the petitioner engages in. Not all prayers are created equal; there are multiple types of prayers. In *Prayer: Finding the heart's true home*, Richard J. Foster outline tree directions of prayer: inward, outward, and upward. Inward is the type of prayer prayed without any constraints; it involves honest self-reflection and is spontaneous. Outward prayer is petitionary and upward prayer is the prayer that praises and adores God (Ladd & Spilka, 2002). Ladd and Spilka investigated these prayers and their cognitive demands by having the participants rate how well 152 items related to their thinking while praying. These 152 items were produced after the researchers picked words and phrases from Foster's descriptions on the types of prayer and previous research. They found that

different types of prayer make different cognitive demands (ibid). One common type of evangelical Christian prayer session makes use of mental imagery in hopes of experiencing God in a richer sense (Luhmann, Nusbaum, & Thisted, 2013)—this is known as *kataphatic* prayer. *Kataphatic* prayer, unlike centering or contemplative prayer does not require the person praying to clear their mind and focus using an object or mantra, but rather you actively use your imagination to pray (Finney & Maloney 1985). The mental imagery used by *kataphatic* prayer, is defined by Goldstein (2011) as “the ability to recreate the sensory world in the absence of physical stimuli”; such a definition confirms that mental imagery is a voluntary mental process. *Kataphatic* prayer is not a new concept to Adventists, the demographic I will be studying. Ellen White describes prayer as “the opening of the heart to God as to a friend. Not that it is necessary in order to make known to God what we are, but in order to enable us to receive Him” (White 2000). This description of prayer is consistent with Luhmann’s operationalization of *kataphatic* prayer. When she uses *kataphatic* prayer in her experiments she hypothesized that the participants would report an increase in religious experiences—some participants reported feeling closer to God. In one of Luhmann’s experiments she had a condition in which the participants listen to lectures on the gospels and the second group used imagery (*kataphatic* prayer) during prayer. The prayer group was guided in their prayer; they were told, “The core of this method is the use of the imagination to draw close to God, to enter into the scriptures and to experience them as if they were alive to you.” (Luhmann, Nusbaum, & Thisted, 2013). They had 4 tracks on the passion, nativity, transfiguration, and 23rd Psalm. For example Luhmann’s paper used the 23rd Psalm and part of the instructions are as follows: "The Lord is my shepherd... see the shepherd before you... see his face... his eyes... the light that streams from him... he turns to walk, and you follow him... Notice his gait... see the hill over which he leads you... feel the breeze over

the grass... smell its sweetness... listen to the birds as they sing... notice what you feel as you follow this shepherd..." (ibid). People in each condition did their procedure for 30 minutes, 6 times a week, for 4 weeks. Before the procedure the participants took pre-training sessions, which consisted of tasks such as letter detection, fade in detection, fade out detection, etc. After the 4 weeks procedure was completed, the participants did a post-training session with the same tasks as before. In every test the participants in the prayer conditions did better than the lecture group, except for fade in detection, in this task both conditions had relatively the same scores. In a post-interview the participants were asked if they experienced God more as a person this month, to this question those in the lecture group had around 35% that said yes but those in the prayer group had around 70% say yes. These results show that Luhrmann was not only able to change people's basic perception (fade out detection) but also their perception of God in only a month.

This imagery that the subjects in the kataphatic prayer group used, I propose, can be used to block mind wandering. Because both mind wandering and kataphatic prayer require imagery, tying up imagery resources in kataphatic prayer should block mind wandering thereby improving focus.

Method

Participants

For this research, I recruited 13 students who were at least 18 years of age from Andrews University's Behavioral Sciences Research Participation Pool. Subjects were required to have normal or corrected to normal vision. Aside from receiving two research participation credits, the participants were not compensated. Standard procedure for the Research Participation Pool requires for demographic data, including sex, ethnicity, age, and religion to be collected, but no other personal identifiers were collected.

Materials and Procedure

The subjects were divided equally into three conditions. The first thing that each participant did was to accept a consent form on one computer screen (there were two screens) after that they were told which condition they would be in. The first condition was a visual task. The subjects in this condition watched a YouTube video named “ One Hour of Relaxing Hymns on Piano”. The video background was of mountains and trees and the name of the song playing appeared on the bottom right corner of the screen. The subjects in this condition were given 15 minutes to watch the video and were instructed that every time they felt their mind wandering or when the needs to remind themselves to focus, they should toggle any key on the keyboard. This key press would be recorded on a button task window that was opened on the other screen. The second condition will have subjects engaging in kataphatic prayer. They will be read a passage from *Steps to Christ*—“Prayer is the opening of the heart to God as to a friend. Not that it is necessary in order to make known to God what we are, but in order to enable us to receive Him. Prayer does not brig God down to us, but brings us up to Him” they were then instructed to use vivid imagery while praying. They had a maximum prayer period for 15 minutes but were allowed to stop earlier than the allocated time. They also press a key on the computer whenever they experienced their mind wandering while praying. Subjects in the third group were simply asked to pray as they normally do, then press a key when their mind wanders; they were also the an allotted 15 minutes. After this, each subject was given a series of questionnaires to measure other possible correlates. This experiment took no more than 45 minutes to complete. One of the questionnaires is on Christian internalization. This questionnaire is given to partial variance due to ease of access or availability of religious concepts. The second questionnaire is the level of trait mindfulness, which is given out to partial out variance due to trait tendencies to mind

wandering. The third questionnaire investigates the participants' perception of God as controlling or autonomy supporting. The reason for this questionnaire is to partial out variance due to perception of the efficacy of prayer. The last questionnaire is of the level of fundamental religious beliefs. It is given to partial out the variance due to belief in a single set of religious teachings that gives special access to God.

Questionnaires given:

Questionnaires	Source	Number of Items	α
Religious Fundamentalism Scale (RFS)	(Altemeyer & Hunsberger, 2004)	12	.91-.92
Internalization of Christianity (CRIS)	(Ryan, et al., 1993)	12	.64-.82
Trait Mindfulness (MAAS)	(Brown and Ryan, 2003)	12	.91
Perception of God as controlling or autonomy-supporting (PG)	(Soenens, et al., 2012)	24	.89-.91
Spontaneous Use of Imagery Scale (SUIS)	(Reisberg, et al., 2003)	12	.83

Results

I used Cognopod to collect my data and then transfer it to Microsoft Excel. After transferring to Microsoft Excel the data was transferred to IBM SPSS Statistics Version 21 software. From there I ran a one-way, between groups ANOVA and a two-tailed correlation on the data.

Table 1
Two-tailed correlation

Correlations									
		BUTTON	RFS	CRIS_ID	CRIS_IJ	MAAS	PG_CONT	PG_AUTO	SUIS
BUTTON	Pearson Correlation	1	-.375	-.615*	.426	.126	-.018	.072	-.155
	Sig. (2-tailed)		.207	.025	.147	.682	.954	.814	.612
	N	13	13	13	13	13	13	13	13
RFS	Pearson Correlation	-.375	1	.672*	.061	-.343	.163	-.225	.072
	Sig. (2-tailed)	.207		.012	.843	.251	.594	.459	.815
	N	13	13	13	13	13	13	13	13
CRIS_ID	Pearson Correlation	-.615*	.672*	1	-.233	-.128	-.097	-.165	.171
	Sig. (2-tailed)	.025	.012		.443	.677	.753	.591	.577
	N	13	13	13	13	13	13	13	13
CRIS_IJ	Pearson Correlation	.426	.061	-.233	1	-.240	.384	-.301	-.053
	Sig. (2-tailed)	.147	.843	.443		.429	.195	.318	.863
	N	13	13	13	13	13	13	13	13
MAAS	Pearson Correlation	.126	-.343	-.128	-.240	1	.065	.313	.599*
	Sig. (2-tailed)	.682	.251	.677	.429		.833	.298	.031
	N	13	13	13	13	13	13	13	13
PG_CONT	Pearson Correlation	-.018	.163	-.097	.384	.065	1	-.050	.253
	Sig. (2-tailed)	.954	.594	.753	.195	.833		.872	.405
	N	13	13	13	13	13	13	13	13
PG_AUTO	Pearson Correlation	.072	-.225	-.165	-.301	.313	-.050	1	.371
	Sig. (2-tailed)	.814	.459	.591	.318	.298	.872		.212
	N	13	13	13	13	13	13	13	13
SUIS	Pearson Correlation	-.155	.072	.171	-.053	.599*	.253	.371	1
	Sig. (2-tailed)	.612	.815	.577	.863	.031	.405	.212	
	N	13	13	13	13	13	13	13	13

*. Correlation is significant at the 0.05 level (2-tailed).

There are several significant correlations between CRIS_ID & BUTTON, RFS & CRIS_ID, and MAAS & SUIS.

Discussion

I rejected my research hypothesis and accepted my null hypothesis that there is no difference in the type of prayer a person engages in and mind wandering. The results I got for the one-way, between groups ANOVA were not significant. The people I had for each condition are too small to correctly make assessment of the effect the type of prayer had on mind wandering.

There are a few reasons for my small sample size. One is that this is a prayer task. Many people do not want to come in and be required to pray. Another reason could be the fact that the time frame for this experiment is around 45 minutes. Around this time of the year when finals and term papers are coming up, people who still need research credit, are looking for experiment that will take a short amount of time or experiments that can be done at home, for example a

survey; not many people want to come in for 45 minutes to pray when finals are around the corner. I also believe that the types of people I had or did not have may have played a role in my results.

My manipulation, regardless of my sample size, was not successful. I believe that vital differences in my experiment and Luhrmann's experiment can account for some of the failure. When Luhrmann did her experiments, the participants volunteered to participate, which means that these individuals are highly motivated. My experiment, though my participants volunteered, they volunteered because they needed research credit for class not because they want to increase their concentration during prayer. Another important difference is that Luhrmann had her participants engage in their conditions for a longer period than my participants. Her participants either prayed or listened to a lecture 6 times a week for 30 minutes for 4 weeks. My participants were only in their conditions for a maximum of 15 minutes, in which they were allowed to stop before their 15-minute time limit was up. It could be that I simply did not allow enough time for my manipulation to have an effect on mind wandering. I also noticed how specific Luhrmann's instructions were. In the 23rd Psalm, the example of the instruction, "The Lord is my shepherd... see the shepherd before you... see his face... his eyes... the light that streams from him... he turns to walk, and you follow him... Notice his gait... see the hill over which he leads you..." are extremely specific and probably does a very good job of guiding the petitioner in what they should be imagining (Luhrmann, Nusbaum, & Thisted, 2013). My instructions simply told the participants in the kataphatic prayer group to use their imagination and specified that they can use auditory, tactile, and visual imagery; my instructions were nowhere as specific as Luhrmann's instructions. At the planning of this experiment, I planned to use her instructions but further reflection made me realize that her instructions could be unsettling for my

participants who are all Seventh-day Adventists. In retrospect, I believe that I should have used more specific instructions what would better guide my participants.

Though my ANOVA showed no significance between the groups I did find significance in my Pearson correlation between the button task and the internalization of Christianity. There was a negative correlation of $-.615$. This means that though my manipulation had no effect I found that mind wandering was inversely related to internalization of Christianity. People who have internalized their Christians beliefs were more likely to focus than those who had lower levels of internalization of Christianity. This correlation is pretty strong, though this could be because I only have 13 participants, and it may be that the effect on internalization is so strong that it wiped out what effect my manipulation could have had on the participants.

This study is still continuing to allow more participants; hopefully the increase in people will stabilize my results. If this study could be changed I would change my instructions for the kataphatic prayer groups to be more specific. I would write it in a way that it is clear to the volunteers what they should be doing but not so specific that it makes Seventh-day Adventists uncomfortable. I would also take into consideration my time frame. Getting students to come into a lab to pray for 15 minutes is hard, but maybe it would be easier if they were allowed to do this at their own time. At the beginning of a new semester I could ask for 60 volunteers that would participate in the study over a period of 4 weeks. They would be required to pray kataphatically, pray normally, or watch a video for a minimum 15 minutes a day, 6 times a week. After the 4 weeks are over I would then ask them to come into the lab and perform their task while doing the button task. Hopefully, this will allow time for the manipulation to work as well as allow the participants to adjust to their conditions so they truly understand what they are meant to do.

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Spontaneous Use of Imagery Scale (SUIS)

*** Please read each of the following descriptions and indicate the degree to which each is appropriate for you. Do not spend a lot of time thinking about each one, but respond based on your thoughts about how you do or do not perform each activity. If a description is always completely appropriate, please select the option on the far right; if it is never appropriate, select the option on the far left; if it is appropriate about half of the time, choose the middle option; and use the other options accordingly.**

1. When going to a new place, I prefer directions that include detailed description of landmarks (such as the size, shape and color of a gas station) in addition to their names.
2. If I catch a glance of a car that is partially hidden behind bushes, I automatically complete it, seeing the entire car in my mind's eye.
3. If I am looking for new furniture in a store, I always visualize what the furniture would look like in particular places in my house.
4. I prefer to read novels that lead me easily to visualize where the characters are and what they are doing instead of novels that are difficult to visualize.
5. When I think about visiting a relative, I almost always have a clear mental picture of him or her.
6. When relatively easy technical material is described clearly in a text, I find illustrations distracting because they interfere with my ability to visualize the material.
7. If someone were to tell me two-digit numbers to add (e.g., 24 and 31), I would visualize them in order to add them.

8. Before I get dressed to go out, I first visualize what I will look like if I wear different combinations of clothes.
9. When I think about a series of errands I must do, I visualize the stores I will visit.
10. When I first hear a friend's voice, a visual image of him or her almost always springs to mind.
11. When I hear a radio announcer or DJ I've never actually seen, I usually find myself picturing what they might look like.
12. If I saw a car accident, I would visualize what had happened when later trying to recall the details.