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Conceptualizing “Prayer” for an East–West Dialogue and Beyond

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Abstract

Early in the American psychology of religion, prayer was a central topic, emphasizing the “self” (James in *Varieties of religious experience*. Longmans, Green, New York, 1902) and social activity (Strong in *The psychology of prayer*. University of Chicago Press, Chicago, 1909). These writings, and contemporary efforts as well, typically conceptualize prayer as a theistically directed activity of communication, locating the work firmly in Western faith traditions. While this orientation captures a portion of the practice within those traditions, it is difficult to carry that definition over into comparative studies with Eastern practices. The present paper explores alternative ways to think about prayer and analogous activities that may facilitate an East–West dialogue. In addition, nontheistic formulations may help extend the conversation to encompass the spiritual practices of people not associated with any sort of traditionally bounded belief system.

Keywords: Religion, Spirituality, Prayer, History,

There are at least two long-standing challenges for scholars working in the sociology or psychology of religion. The first is to make clear the nature of our work. In the general population, there is often a misperception that our task as scholars is either to support or to dismiss religious faith. Correcting this commonplace thinking is not a small task. Efforts along

these lines are complicated by our second perennial challenge, that of definitions. Sociologists with their emphasis on group processes and contexts are accused of using definitions that are too broad and vague; psychologists emphasizing individual-level behavior are chastised for the narrow precision of their constructs. Practitioners in both disciplines are critiqued for being either reductionists or apologists on the basis of their definitions. Since the errors of which we are accused tend to fall at opposite ends of the intellectual spectrum, when we are together, our collective insights should locate us at a balanced midpoint, as any statistician can attest.

We will attempt to stay in this middle ground as we articulate thoughts on the scientific study of prayer. As a central component of faith-based belief systems, prayer has both individual and communal features. These features, however, are not perfectly aligned across multiple traditions; definitions and expressions of what constitutes prayer cannot be taken for granted. Over the course of this paper, we will explore some of the contexts in which prayer exists and include a quick overview of the relevant scientific research in the West. Then we will offer some observations on the highly cognitive nature of that research and suggest an embodied paradigm that may provide a basis for additional conversations. Overall, what we hope to convince you of is that it is feasible and necessary to conduct our research simultaneously in the academy as well as in multiple, real-life cultural contexts.

East and West: The Context of Prayer

At the onset, it is useful to specify how we conceptualize traditions of East and West. The deeper one delves into this task, the more complex it becomes because the roots of belief systems are inherently and densely interwoven. Further, it is unlikely that anyone attempting to work between the systems will be able to set aside fully her or his deeply ingrained cultural biases. In

awareness of these significant challenges, we offer the below thoughts in the spirit of a conversation as opposed to a simplistic declaration.

For the purposes of the present paper, we will adhere to the simple, classic sense of Eastern traditions as Hindu, Buddhist, and their close counterparts. In a similar fashion, we place Jewish, Christian, and Islamic systems together on the basis of their shared historical background. While there are important caveats with regard to this classification, it provides a rough distinction with regard to the practice of what may (or may not) be counted as expressions of prayer. In broad generalizations, Eastern prayer is oriented toward experiences of unification, while Western prayer emphasizes interactions with a specific, single deity. Alternative language to characterize these belief positions could be “dharmic” and “Abrahamic,” although those phrases have their own intellectual biases. Again, in spite of the significant number of exceptions to either type of language, what we are seeking is a place within which to converse that is familiar to the preponderance of readers, whether or not they have extensive backgrounds in parsing the nuances of faith traditions.

As detailed in our recent book devoted to the scientific study of prayer (Spilka & Ladd, 2013) early in the American psychology of religion, prayer was a central topic, emphasizing the “self” (James, 1902) and social activity (Strong, 1909). These writings, and contemporary efforts as well, typically conceptualize prayer as a theistically directed activity of communication, locating the work firmly in Western faith traditions. While this orientation captures a portion of the practice within those traditions, it is difficult to carry that definition over into comparative studies with Eastern practices (Nelson, 2009).

A primary reason for this situation is that Eastern and Western practices do not share a common theistic understanding. The West leans toward monotheism, classically conceptualizing God as a “single other” clearly distinguished from humans and the physical world. Many models in the East favor the absence of such a hard and fast distinction, instead often describing multiple deities with more permeable boundaries between metaphysical and physical realms or specifying no particular deity. For example, Hinduism alone defies reductionist efforts because even a cursory glance at its history reveals a plethora of forms ranging from polytheistic to atheistic. Nonetheless, prayers in the West typically are offered with the expectation of a single discrete deity hearing and responding in a fashion that is largely independent of the individual’s own will or control. In contrast, traditional prayers in an Eastern context have far more variability, with some deity-oriented and some more fundamentally focused on a person’s self. The self-development, of course, does not occur strictly in isolation since help from others constitutes a formative power in and of itself. The general distinction holds, however, that Western prayers are directed at some “other” while Eastern prayers are oriented toward the self in many critical ways.

The obvious question arises of the utility of the word “prayer” as we think about research that spans these Eastern/dharmic and Western/Abrahamic cultural contexts. While we have seen that people in the Hindu tradition can respond to Western crafted prayer scales (Ladd et al., 2011), those individual-level responses leave unanswered critical questions about the larger sociological context within which the respondents are embedded. Although the word “prayer” is commonly employed in both traditions, is it really the same type of practice in a scientific sense?

One possible way to approach this situation is by conceptualizing prayer as a form of communication (Baesler, 2003). This has a distinct analog in cases of theistic prayer, though the communications between human–divine and human–human partners clearly are different (Ladd, Vreugdenhil, Ladd, & Cook, 2012). Baesler (2003) notes interesting links between Eastern and Western traditions of “name” prayers, equating the repetition of a mantra with the repetition of the name of Jesus. The difficulty with this model, however, is that it seems to break down substantially in situations where there is no clearly “other” deity involved and the dyadic nature of the communication is altered. While the single word/name repetitions bear similarities regarding the physical practice, the targets or purposes seem distinctly different as noted above. In other words, the communication model loses some of its elegance in an Eastern context.

An alternative is to conceptualize prayer as a means of experiencing connectivity (Ladd & Spilka, 2002, 2006), in particular a connectivity that is highly flexible as opposed to very rigid (e.g., a boat tethered to the shore). The notion of connectivity is related to, but distinct from, ideas of prayer as relationship that are frequently advanced (Ladd & McIntosh, 2008; Ladd et al., 2012). Prayer as relationship suggests that some “other” hears and responds to the entreaties in some fashion. This formulation captures some, but certainly not all traditions, particularly in instances where no specific deity is identified. In addition, the “relationship” is often assumed to be similar to a human–human relationship; however, that characterization is not adequate if the deity is “other” and distinct from humans. From our perspective, it is more theoretically useful to think of prayer in a more abstract fashion. This abstraction allows for the inclusion of deity-targeted prayers, but also for non-deity situations. In both cases, but more strongly in the latter, it is quite common for the practitioners to argue that the experience of praying is beyond linguistic

expression. Language aside, people still contend that the act of praying offers a sense of connection beyond oneself that is otherwise not necessarily encountered.

For instance, some forms of prayer foster an inward examination of the self. In these moments, people seek to better understand their own personal spiritual condition in relation to the standards to which they aspire. The emphasis falls on what they may have done (or left undone) that pleases or displeases them. Other prayers emphasize a sense of connection with other people or the world in some fashion. This way of experiencing prayer may include the hope for environmental conditions or precise desires with regard to the health of loved ones. Still other ways of praying may seek to de-emphasize both self and others, with a preference for an experience of being connected as a part of a larger, deeper sense. In this context of praying, the individual may seek a sense of tranquility and harmony with all that is seen and unseen.

This sort of formulation may provide a platform for East–West discussions of this sort of spiritual practice. For instance, at the core of Hindu tradition is Brahman, or the Ultimate Reality to which adherents claim connections by way of many discrete pathways. Buddhism, likewise, speaks of paths to awakening or liberation from passions that artificially divide. In these and other senses, connectivity is preferred over division, but do these concepts stretch the word “prayer” too far? Before addressing that question directly, allow us to quickly recap what we know about Western traditions of prayer from the scientific point of view.

The Western State of Scientific Prayer Research

In order to outline this body of knowledge, we will break it into three sections. The first of these provides an exceptionally rapid overview of the history of scientific prayer

work. The second section provides a short overview of some fundamental assumptions about prayer and the third portion highlights some select themes within the prayer literature. Of necessity, we have limited this portion of the paper largely to presenting findings in the Western literature. It is our hope that scholars with greater access to counterpart literatures elsewhere will supplement these efforts with summaries from other contexts to expand the conversation.

A Highly Abbreviated History

Any quick summary of the psychology of prayer in Western literature begins with Strong's (1909) book. With an emphasis on the social nature of prayer, she was echoing the writings of James (1902), but pushing beyond his notions of "self" to find a wider view of the spiritual terrain. Not long after this auspicious beginning, the work on prayer paused with explanations of the behavior as "autosuggestion" (Stolz, 1913) signaling the start of a reductionistic era in the field. Fast-forwarding to the 1980s, we find a resurgence of interest in the psychology of religion at large (Spilka, Hood, & Gorsuch, 1985), though it would be another decade until the study of prayer would take hold again (e.g., Poloma & Gallup, 1991). It was not too long before prayer became at least a mildly warm, if not hot, topic in counseling (Gubi, 2008) and medicine (Krucoff et al., 2005). Along the way, relatively few laboratories developed programmatic research agendas, so the overall development of the field was not robust. As one example of a consistent line of work, our laboratory (Ladd & Spilka, 2002) worked on the idea of prayer as a means of establishing a sense of connectivity with the self, others, and the divine. In a series of eight empirically derived scales, we were able to show over time that this conceptualization helped us understand prayer's multidimensional nature (Ladd & Spilka, 2006). More recently, we have begun to think about the interaction of prayer and physical systems outside of pragmatic healthcare terms (Ladd & McIntosh,

2008).

As we detail elsewhere (Ladd & Spilka, 2013b; Spilka & Ladd, 2013), prayer research has come of age in some important ways. For instance, articles on the topic are appearing in top-tier psychology journals in the USA and abroad. Posters, papers, and even the occasional featured lecture at professional conferences are far more common than one might have predicted a decade ago.

What is Prayer and How Does it Work (or Not)?

This is without a doubt one of the most central components and we will only touch lightly on a response that will help to ground this presentation's definition of prayer a bit more. Levin (1996, 2009) provides a nice summary of the possibilities here. On the one hand, the locus of prayer is important to consider and Levin places that on a dimension of supernatural to naturalistic. Prayer, independent of the practitioner's beliefs, may link into supernatural forces; this is clearly beyond the realm of science; however, it remains a possibility. As an alternative, prayer may be purely naturalistic in character. For instance, when people pray, they may breathe more deeply, increasing the oxygenation of their blood, thereby enhancing the cognitive ability to process information more efficiently.

Along another dimension, Levin (1996, 2009) observes that the effects of prayer may be thought of as either local or non-local. For instance, prayer may operate in specific situations for specific individuals or it may operate on a different plane (e.g., bestowing peace on all sentient beings). This description of prayer's orientations can help us think about a host of issues that are of importance in both Western and Eastern notions of prayer. A supernatural—local prayer might be deemed a divine intervention, while a supernatural—non-local prayer could be

interpreted as a type of redemption. A naturalistic—local prayer could be designated a form of social support and a naturalistic—non-local prayer could be represented as a form of energy.

Broad Themes Within Prayer Research

In large part, studies of prayer up to this point may be roughly categorized as focusing on description or efficacy. The former type of study is most widely demonstrated in correlation-based reports that offer snapshots of how the frequency of prayer relates to a plethora of variables. There are multiple difficulties with this approach, but chief among them is that they are not able to speak to the multidimensional character of prayer; content and context both matter greatly. Along with a few other research groups around the world, our laboratory at Indiana University South Bend has sought to address these shortcomings by engaging in descriptive work that digs deeper into the nature of prayer. What kinds of language are used by whom and in what contexts? Moving beyond self-report measures of language, brain-imaging studies in other laboratories have sought to pinpoint areas of activation during prayer in an attempt to better understand the neural levels of spiritual disciplines. While many significant challenges exist to this latter strategy (Ladd, Cook, Foreman, Ritter, & Mertes, 2015), it represents the seriousness with which the descriptive task has been embraced. Additional recent research has sought to understand how prayer relates to other cognitive processes, such as “theories of mind” and related concepts. While these descriptive investigations collectively have served to advance the sophistication of the dialogue, such efforts only take us so far.

A second variety of prayer study is that concerned with efficacy. In these projects, the basic question is: What is prayer good for and can it be intentionally harvested for specific purposes? The bulk of this research is in the domain of health care; if one conceptualizes

counseling as a form of health care, then the percentage in this area increases significantly. This approach often is hampered by notions that prayer is similar to physical remedies. The idea of giving and withholding physical treatments dovetails nicely with experimental designs; however, it has yet to be explained how any such comparison is possible with prayer. How can it ever be ascertained that “no prayer” was ever the case? Likewise, a significant problem revolves around issues of dosage: Are more prayers necessarily better? In the counseling genre, the emphasis falls on prayer as a mechanism through which people derive meaning or establish a sense of control. Again, we have certainly gained new information from these investigations; however, questions remain concerning the validity of that knowledge.

In some rare instances, descriptive and efficacy agendas coincide, but that is the exception rather than the rule. Even when they do coexist in a study, the evidence tends to circle around issues of cognition (language and abstract thought, in particular) and healing, whether physical or mental. This leaves an interesting gap at the center of the literature: How is it that prayer (or similar spiritual disciplines) relates to lower-level processes such as sensation and perception? Within psychology, we have known ever since the Gestalt school was in vogue that how people think changes how and what they experience at a physical level.

This has been tapped somewhat in studies using religious priming; however, those studies typically restrict their interest to the influence of priming on other types of higher-order cognition such as decision-making. Our interest, however, is at a more basic level where we believe Eastern and Western practices demonstrate commonalities. We want to know the extent to which prayers interact with basic sensory and perceptual processes. In other words, how is prayer embodied at very simple levels?

Linking the Brain and the Body

To get at this question, we must explore one additional body of the literature. Western science and religion largely concur on the mutually influential nature of the body/mind interaction. What remains to be done from a Western perspective is to explore the mechanisms and conditions under which these mutual influences transpire. Historically, research on the topic of altruism (Darley & Batson, 1973) approached the question in a broad fashion, thinking about how physical actions (behaviors) might be linked to mental activity (cognitions). Recent investigations have become more tightly focused under the rubric of the cognitive science of religion (CSR; for a review see Tremblin, 2006). In CSR efforts, mind is frequently limited to brain processes in a variant of material monism (i.e., there is no nonphysical mind) that regards the body as primarily a vehicle to provide the brain with information about the external world. Moving beyond the initial, rather reductionist, CSR formulation, a position deemed “embodied cognition” (EC) has started to take hold (Gallagher, 2005; Gibbs, 2005; Wilson, 2002).

To be clear, we are not advocating for a reductionistic understanding of the practice of prayer. Such an approach would have little room for dialogue with Eastern traditions where multiple methods of study are critically important (Rao & Paranjpe, 2016). Instead, when we speak of embodiment, our interest is squarely on how bodily experiences influence and are influenced by the act of praying. One example of a domain where the conversation on embodiment might occur is outlined in the work of Haberman (1988). He argues for the flexible nature of reality as it is constructed via experiences, especially as affected by ritual action in the bhakti tradition. While this is obviously only one among a plethora of examples, it serves to demonstrate the balance we seek to strike in our collaborative works.

There are, of course, multiple additional Eastern conceptualizations to bring into the conversation. Many of these ideas hinge on understandings of the relation of mind, body, and consciousness that are distinctly different from Western notions. Though we are not able to explore the great diversity available, these conversations will occupy many future efforts to better understand global perspectives concerning prayer.

Embodied Cognition

In some ways, embodied cognition brings to mind early Gestalt theory (cf., Koehler, 1929). Koehler's (1929) work makes it obvious that although people share fundamentally similar cognitive processes, they can differ markedly regarding both the final composition of those structures and the relative degree of complexity involved in attaining that state. In other words, an individual's motivations influence how they organize and interpret any given event. This manner of thinking was also evident in the "New Look" articulated by Bruner and colleagues (Bruner & Postman, 1949; Bruner, Goodnow, & Austin, 1956) who built on Bartlett's (1932) classic study of remembering and dovetailed with his later work on thinking (Bartlett, 1958). This emphasis on unconscious processes in relation to cognition developed through several iterations (Greenwald, 1992). A main result of this thread of thought was that events not rising to the level of conscious awareness were given credence as influential on a variety of conscious processes.

Even more important for the embodied cognition approach is the early work on metaphors developed by Lakoff and Johnson (1980). The authors outlined systematically how deeply embedded metaphors were in linguistic patterns and argued that this is not mere chance. Instead, as subsequent experimental work has supported, the metaphors and bodily sensations often are linked. For example, Williams and Bargh (2008) reported that holding a

warm object as opposed to a cold one increased one's evaluation of another person as more "warm" and caring. In a similar vein, Jostmann, Lakens, and Schubert (2009) linked holding heavier (as opposed to lighter weight) objects with more elaborate thinking and other indices of cognitively effortful processing.

Embodied Vision

In addition to these examples of tactile embodiment of cognition, alignment between thought and vision is far from new on the scene (Duffy & Kitayama, 2010). Again, reaching back to the early Gestalt psychologists, we have ample evidence of these processes (Yarbus, 1967). Attention being paid to the visual sense is clearly on the increase. Balci and Lassiter (2010) have assembled a set of informative chapters that cover the topics of motivation, neural activation, and ecology, all in relation to their interactions with vision.

Margolis and Pauwels (2011), from a sociological perspective, offer a wealth of technical information about how to properly conduct research in this area. Their edited volume spans topics from film to ethnography, from semiotics to iconography, from children's drawings to landscape photography. Mitchell and de Lange (2011) emphasizes approaches using cameras to capture what is visually influential for individual people. Beyond the idiosyncratic use of cameras by research participants, eyetracking tools have now become more widely available and are used in a variety of situations to help capture reflections of thought in this physical movement (Olk & Kappas, 2011).

A Western Synthetic Model of Mind and Body

One notable attempt to synthesize cognitive science and embodiment is the Interacting Cognitive Subsystems approach (Barnard & Teasdale, 1991; Teasdale & Barnard,

1993). This broad ranging theory distills into two main forms of developing meaning: propositional and implicational. The former relies heavily on language, stressing how meaning is formed and expressed using words. The latter emphasizes non-linguistic, holistic ways of knowing, including information derived from sensory experiences and affective states.

With regard to visual events, this model contends that visual stimuli have a quick path to arouse implicative, unprocessed meaning; visual intuition is activated. Simultaneously, the contents of the visual scene are evaluated at a propositional level to determine their identities and relations to other structures. Yet again, at the same time, bodily sensations contribute to implicational activation as well as actual physiological responses that yield bodily activity. In other words, whenever a person views something in the surrounding environment, multiple systems become energized in an attempt to discern how best to respond.

The above synthesis is made yet more intriguing by the argument that left brain activation is more related to the propositional system while right brain activation is linked to the implicational processing. This raises the question as to whether or not various scenes will receive differential attention and will be experienced in different ways depending on the angle from which they are viewed. This literal change in perspective presents an empirical question that may be directly linked to the metaphor of “seeing things from a new angle.”

Clearly, this discussion is rooted in Western concerns where the dichotomy of body and mind has long been a staple of philosophy and psychology. This may strike those having spent most of their lives embedded in Eastern traditions as an odd state of affairs because mind–body dualism is not as representative of the Eastern traditions. Nevertheless, the embodied cognition framework is one that holds potential for reinvigorating collaborations across the East–West ways of thinking because this manner of thinking has very deep roots in Eastern notions. For

instance, multiple chapters in Coakley's (1997) edited volume articulate Eastern frameworks relevant to embodied religious practices. So, too, the chapters in Rao and Paranjpe's (2016) text provide an extensive set of observations through which to engage this topic. One of the outstanding services of this particular text is the manner in which the chapters demonstrate the great diversity of Indian psychological thought, including close examinations of the roles of both physical and metaphysical factors. Likewise, Samuel and Johnston's (2013) collection highlights "subtle-body" conceptualizations that seek a middle ground between mind/realism and matter/materialism.

Bringing Religion into the Picture

It is interesting to note that, despite the fact that religious faith is responsible for an enormous percentage of the Westerner's visual landscape (e.g., painting, sculpture, architecture), it has not received an abundance of attention in the realm of embodied cognition (for non-empirical examples, see Roth, 1997; Shoop, 2010). For instance, in a sociological chapter devoted to iconography (Mu"ller, 2011), political icons are considered; however, religious icons, arguably more prevalent and enduring, are not explored. In a series of exceptions to this neglect, Colzato and colleagues (Colzato et al., 2010; Colzato, van den Wildenberg, & Hommel, 2008; Hommel, Colzato, Scorolli, Borghi, & van den Wildenberg, 2011) have demonstrated in the USA how belief systems such as Calvinism and atheism influence both visual attention and visual behaviors such as depth of eye blinks. Savage (2008) also provided data to support the idea that conservative and liberal-oriented Christians in the UK perceived others in distinct ways.

These studies provide an interesting point of departure for more detailed investigations. In particular, it would be fascinating to explore not just religion or broadly defined belief systems

in general, but the more specific faith-based practice of prayer. Why is this even remotely important? The importance lies in the fact that the language of Western prayer is deeply infused with visual metaphors: praying ‘til the light shines through; seeing God’s plan; going face to face with God; deliverance from darkness. As Lakoff and Johnson (1980) argued, metaphors typically arise in response to some stimuli, even those that are not necessarily fully conscious. But this language of vision is not limited to Western approaches to prayer. Eastern prayers, whether theistic in their own sense or non-theistic, also demonstrate similar linguistic themes of lightness and darkness. It may also be the case that this sort of linguistic convention holds true among non-theistically oriented people in the West who claim to engage in “prayer” in their own fashion.

The Myth of Meaning?

If, in fact, the ways in which people pray (whatever they individually intend by that phrase) are literally linked to what and how they see the world around them, then this would provide a potential physical mechanism to underpin theories of how prayer helps people cope within multiple cultural contexts, whether theistic or non-theistic. Even more basic than that, however, it could support the argument that prayer per se is not so much about higher-order processes (e.g., meaning making, coping, or even theory of- mind abstractions and actions) as it is low-level perceptual activity.

For many years, a prevailing assumption in the Western psychology of religion has been that one principle function of religion is to aid in the creation of meaning (Paloutzian & Park, 2005). Meaning, however, is a great luxury that never comes to many who seek it with or without religion as a guide. While it is certainly possible that one’s belief tradition may be of assistance in discovering some form of meaning, it is by no means a certainty. On the other hand,

it is possible to argue that what religion is much more consistent at providing is a form of structure for the environment. It is not feasible here to go into great depth on this point, but suffice it to say that if religion, and prayer in particular, operates on the supposed lower level, it may well be the case that this activity is not about finding meaning so much as it is about grasping the structural facets of the environment. In other words, prayer may first address “how” the environment or personal experiences are perceived. Only after that initial appraisal will prayer and religion begin to deal with upper-level questions concerning “why” the environment or personal experiences “are as they are.” If true, this could generate substantial new interest in the study of prayer because it would relocate the epicenter of prayer within the physical being while simultaneously respecting the theological traditions in which the spiritual discipline is inherently embedded. Instead of treating prayer as a highly processed form of cognition, a variety of manipulable placebo panacea, or a mere pattern of neural activation, this non-reductionistic approach considers the possibility that prayer is simultaneously theological cognition and physical activity, as per the work on embodiment cited above.

This position effectively captures Western prayer practices where it is not at all uncommon to encounter reports of people for whom prayer and religion in general provide more of an extrinsic guide than an intrinsic driving force. Simultaneously, it taps into Eastern practices where the expectations for meaning are not necessarily as great in the same fashion. Rather, in these traditional contexts, a significant goal of the practice is ultimately to find release from the need for or attachment to meaning.

Thinking About Embodied Prayer

Here it is, then, that we return to the earlier question: How is prayer embodied at very simple levels? One possible answer appears to be that the act of “praying” may be linked to low-level activity such as eye movements; thinking and seeing in the context of faith (whether religious or not) can be mutually determining. But why might this be the case? At this point, our attention turns briefly to potential underlying mechanisms.

Lakin, Jefferis, Cheng, and Chartrand (2003) propose that the process of spontaneous imitation of the behavior of others works to augment group cohesion. Since there are clear benefits for safety and sharing of resources within groups, it is advantageous to belong; learning and imitating the activities of members are a way of increasing the odds of acceptance. Again, this idea was offered by Strong (1909) in relation to praying behavior; what we are adding is new only in the sense of coordinating more recent developments in the literature that validate her keen insights.

Cursory observation reveals that there is a large amount of mimicked behavior inherent in prayer sessions (Lakin et al., 2003). Often this imitative behavior is initiated by a leader, whether official or ad hoc, but the replication of action often appears spontaneous. This implies that prayer behavior in-group settings can persist on the basis of its mimetic power to facilitate social cohesion and signal in-group and out-group status. Even if any given individual has doubts concerning prayer’s ability to provide information helpful to navigate the shoals of life, that person’s impetus to sustain social benefits may be strong enough to perpetuate the behavior. Justification of this action, in all likelihood, would be post hoc.

The principle of intermittent or partial reinforcement further suggests that if, during the course of this group-motivated responsivity, a single instance of prayer provides high-quality information, then the practice may continue on its own merits. Supplemented as it is by group-

level social reinforcement, it can gain additional motivational strength. Once begun, such praying may carry with it physiologically rewarding side effects (Ladd & McIntosh, 2008). To the extent that prayer has these unintended positive ramifications, it should continue, even during periods when it is not perceived as being especially helpful or appropriate with regard to the amount and kind of information obtained.

Coupling these observations with recent advances in embodied cognition (Gallagher, 2005; Wilson, 2002) brings us to contemplating how the cognition facets of prayer might interface at a low level (as opposed to complex, higher-order cognition such as decision-making or abstract thought). In particular, after a series of projects dealing with visual images and prayer (Ladd, 2011), consideration turned toward vision as a particularly compelling place to being our next systematic inquiry.

The Interacting Cognitive Systems as a Model for Exploring Prayer

An early text by Watts and Williams (1988) shares similarities with the Teasdale and Barnard (1993) framework as a theoretical model for understanding the psychology of religion. The more recent work by Watts (2012) makes explicit those links. It is possible to see within religions and their various rituals frequent examples of knowledge that operates at the propositional or linguistic level. For instance, creeds, prayers, sacred writings, and detailed instructions for the execution of ritual activities all find their direction via carefully structured language (Ladd & Spilka, 2013a). Yet it is also possible that these very same practices activate a sense of faith that is compelling at the implicational level. While the words of any given prayer can be spoken as a rote practice, they may also be found to be deeply moving at a level beyond words. In other words, the same stimuli can activate at multiple levels (i.e., academic and mystical).

This application by Watts (2012) further suggests that different ways of praying, such as actively seeking God or waiting in a still receptive state (Baesler, 2003) might be thought of in terms of hemispheric engagement. It could be the case that the active dialogue of prayer, where language is freely employed, is associated with the propositional system and left brain activation. Under conditions of receptive prayer activity, we might anticipate engagement of the implicational system and more right brain activation.

Interaction Ritual Chains as a Model for Exploring Prayer

Collins (2004) builds on Durkheim and Goffman in a way that is thoroughly compatible with the above sketched Teasdale and Barnard (1993) model. In brief, he argues that assembled groups generate common information that is objectively apparent, not only linguistically, but also spatially as the bodies of participants literally move about occupying physical space. At the same time, these gatherings bring into being a “collective effervescence” (Durkheim, 1912/1995) that fosters discrete, observable outcomes.

This movement back and forth between explicit and implicit group-level phenomenon clearly parallels the cognitions occurring at the individual level. As such, linking these theories seems a promising way to engage in productive transdisciplinary work (e.g., Medicus, 2000, 2003). In particular, Stawski (2011) suggests that Collins’ (2004) approach may be of use in understanding prayer practices by virtue of the extent to which such practices are related to status and power. Additionally, the degree to which prayers are fluid or more formal can also play a role in both the implicit and explicit outcomes of group praying. For instance, the interplay between notions of prayer and mindfulness provides one domain in which to explore Western (often pragmatic) and Eastern (often lifestyle-integrated) models.

Some New Directions

The psychological approach outlined by Watts (Watts 2012; Watts & Williams, 1988) and the sociological framework detailed by Collins (2004) and Stawski (2011) offer fertile theoretical ground upon which to base investigations. To explore this arena, we are planning to build on previous work in our laboratory that revealed how adopting different physical postures during prayer influenced the nature and content of those prayers. We also demonstrated that certain kinds of movement during prayer (e.g., walking a labyrinth) were subjectively, but not objectively emotionally superior to other kinds of movement (e.g., freely wandering). Finally, we found evidence that the ways in which people prayed corresponded with photos they took of “spiritually important” scenes. For instance, those with a self-oriented prayer life returned photos that were of a close-up nature while those with an “other-oriented” prayer life submitted pictures of broad vistas including many people.

Within such investigations, we believe it is feasible and necessary to ask questions that tap into both individual and group processes, incorporating the best of psychological and sociological approaches. Likewise, we are looking forward to collaborating with colleagues deeply embedded in knowledge of Eastern traditions so that we can revise the models appropriately or discard them in favor of even better ways to understand what people mean and do when they say that they engage in prayer.

We intend with this paper to raise more questions than we answer. We appreciate deeply that our current knowledge is limited and the diversity of traditions is wide. We offer the suggestion of an embodied paradigm, but we also seek to dialogue with other scholars and practitioners to extend both our knowledge and our research practices to include faith traditions underrepresented in this research area. As Oman and Singh (2016) articulate, there will be a need

to approach the topic of prayer from theoretical, empirical, and experiential directions as minimal points of departure. We anticipate that this dialogue will raise additional research questions for which collaborative efforts may seek answers.

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Psychol Stud 123
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