

Conceptualizing Religious Practices in Psychological Research:

Problems and Prospects

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Abstract

This article addresses the problems and prospects that follow from the conceptualization of religious phenomena and practices for scientific investigation in the psychology of religion. Two Western research traditions—instrumentalism and operationalism—are described and their potential contribution to a mismatch between what researchers intend to study and what they actually study is illustrated through two exemplar studies. The exemplar studies show how researchers' concern with methodological rigor can compromise the rich and thick meanings of religious practices, resulting in the misrepresentation of the practices and misleading both the psychological and religious research consumer. Several suggestions for dealing with these problems are discussed.

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A vital but underestimated part of any research study in the psychology of religion is conceptualizing the phenomena to be studied. Religious practices, in particular, are rich and thick with meanings that are not easily conceptualized or structured for scientific investigation. Yet, many Western researchers have historically been concerned more with methodological rigor than with the preservation of such meanings. They ultimately simplify and reduce, so that many aspects of these meanings are lost or not studied at all. The consequence, unfortunately, is the potential mismatch between what is *intended* to be studied and what is *actually* studied.

This article attempts to discuss these problems and the prospects for solving them. Two Western research traditions are first described that lead to many of these problems: instrumentalism and operationalism. Then, two exemplar studies are discussed that illustrate these two traditions in the investigation of religious practices. The first study is a methodologically sophisticated study of theistic prayer, while the second is a rigorous physiological investigation of nontheistic meditation, both authored by leading researchers. In each case, the meanings of religious practices are modified in ways that lead the investigation away from what was originally intended to be studied. Yet both studies discuss their results as if they were directly applicable to the religious practices in question, misleading secular and sectarian readers alike. Several approaches for dealing with these issues are explored.

Two Problematic Western Research Traditions

Before reviewing these two studies, two Western research traditions are described that are at the root of many of the problems in conceptualizing religious practices: instrumentalism

and operationalism. The first research tradition concerns how religious practices are often *reconceptualized* when they are moved from the meaning of the religious person who practices them to the meaning of the scientific investigator who investigates them. The second tradition concerns how this reconceptualization is translated into scientific observations. As we will see, both of these moves change the nature of what is studied so that what is intended to be studied is *doubly* removed from what is actually studied.

Instrumentalism. The first research tradition is the instrumentalism of Western social science. Instrumentalism basically emphasizes means-ends reasoning, where the primary if not *only* question is: what is the most effective or efficient means for achieving a particular end? Indeed, as philosopher of social science Robert Bishop (2007) shows, this particular question has become the “predominant picture of rational thinking” in Western psychology (p. 82). As Bishop explains, human action has been instrumentalized in Western psychology, such that “all actions are merely means or instruments for achieving our aims with little if any thought for the morality of our actions...or the worth of our aims” (p. 82). In other words, instrumental reason does not evaluate the moral worth of either the means or the ends; only the efficiency and effectiveness of the means in achieving the ends are evaluated.

Instrumentalism is so pervasive, according to Bishop, that knowledge itself has become “instrumental knowledge” in Western psychology (p. 84). Psychological knowledge, in this sense, is for the sake of efficiently and effectively reaching some psychological goal, and this goal is largely taken for granted—the “maximization of happiness” (2007, p. 82). A study of two different therapies, for example, is often *automatically* instrumentalized as a comparison between different means for providing the happiest client ends. Therapy simply *is* an instrument

of client well-being. Indeed, this instrumental understanding of research is so taken for granted in the West that many Western psychologists would be hard-pressed to formulate an alternative.

The problem with the dominance of instrumentalism, as Bishop describes, is that this Western mindset is “quite limited,” perhaps even “trivial” (p. 99). This instrumental mindset is not only inadequate to the whole of human activity, but it can also be harmful. Bishop argues, for example, that it has led people in the West “to the crass treatment of other people as mere means to our desired ends” (p. 90). Psychologist Blaine Fowers (2000) cites many Western marriages as tragic examples of this instrumental treatment. Because individual happiness is the most important end in many Western countries, marriage is viewed as merely another means to that end. Personal *unhappiness* is thus grounds for divorce, regardless of the quality of the marriage itself.

Perhaps the most telling examples of the limits and dangers of this instrumental understanding of action are found in the psychology of religion. Many religious people view themselves as not only evaluating means and ends morally but also caring about ends beyond their own individual happiness. For many religious people the worship of God is difficult to fathom from an instrumental perspective, because God is not merely a means to the individual’s happiness; God is an end in Himself, regardless of our happiness. As we will see, however, the instrumentalism of social science research has led investigators of religion to disregard these *noninstrumental* religious meanings and conceptualize them in solely instrumental terms. Western researchers have effectively ignored the possibilities of prayer for the sake of God or meditation for the sake of enlightenment and repeatedly re-interpreted these religious practices as ultimately for the sake of the person who practices them. These re-interpretations are illustrated and detailed in two exemplar studies (below).

Operationalism. At this point, however, another important tradition of research in Western psychology needs description—the process of operationalizing (Slife, Wiggins, & Graham, 2005). This process typically occurs *after* researchers have conceptualized the religious practice under study, such as prayer or meditation. In other words, the first move of conceptualizing religious practices for study is typically to redefine them, from noninstrumental to instrumental meaning. The second move is to “operationalize” these instrumentalized meanings or to translate them into “scientific operations” that can be empirically studied.

Typically, these operations are thought to be the observable (or publicly observable) manifestations of the scientifically nonobservable (or privately experienced) meaning or construct under investigation. For example, if the nonobservable but privately experienced meaning under investigation is *love*, as in “I love my wife,” then it would seem reasonable to many researchers to study the presumed manifestations of this love, such as hugs and kisses. The actual meaning of my love for my wife is not strictly observable, because it involves my experiences and intentions toward her, phenomena that are not considered scientifically observable (though they may be privately experienced in some manner). Traditional research is thought to require sensory experiences only (e.g., vision), so this requirement forces the researcher to study the observable manifestations of this love, such as hugs.

This process of operationalizing is routine for many topics in psychology, especially privately experienced topics such as attitudes, motivations, and memory. Indeed, because many topics in the psychology of religion are not scientifically observable, such as spirituality and religiosity, operationalization is almost standard research practice. These topics are routinely operationalized as either observable behaviors (e.g., church attendance) or observable responses to questionnaires (e.g., a religiosity scale), and the relationship between what is measured

(attendance frequency or questionnaire performance) and the unobserved topic being operationalized (e.g., religiosity) is rarely discussed. Moreover, the findings on what is *actually* studied (e.g., frequency or performance) are routinely presented as evidence of what was *intended* to be studied (e.g., religiosity).

These research practices are deeply problematic for several reasons. Perhaps foremost, the observables actually studied are not identical to the topic originally intended. Studying hugs, for example, is not identical to studying love. Hugs can occur without love, and love can occur without hugs. As we will also see in the two exemplar studies (below), whatever operationalizations are studied in the psychology of religion, they are not identical to the construct the investigators intended to measure. Indeed, it is safe to say that *no* operationalization is identical to the construct being operationalized; there will always be important differences.

These differences mean that a study of hugs, or any combination of operationalizations, should *never* be represented as a study of love. We emphasize “never” here, because the relations between love and hugs, or between any operationalization and the construct being operationalized, are not empirically knowable, *in principle*. This is because the relation between the operationalization and the construct being operationalized is not itself observable. After all, how can one empirically know the relation of the operationalization to something that is not observable? How can one observe the relation between hugs, which are observable, and love, which is unobservable?ⁱ

The lesson here, as applied to the study of religious practices, is twofold. First, any study of an operationalization of a religious practice is not a study of the religious practice itself. The meaning of the practice for the religious person—i.e., the practice *as* practiced—is not identical

or even necessarily related at all to what is ultimately studied. Second, any findings that are pertinent to what is *actually* studied are not necessarily applicable to what was *intended* to be studied. The relation between the actual and the intended is not itself known or empirically knowable, so any relations between the two should not be assumed.

The cumulative effect of these two research traditions, instrumentalism and operationalism, is that the phenomena that are frequently studied may be *two steps* removed from the phenomena that were intended to be studied. With religious phenomena, the first step is that *noninstrumental* meanings, such as love, altruism, worship, prayer, and meditation, are instrumentalized, i.e., made into an instrument of the practitioner's happiness. The second step, is to change these problematic reconceptualizations *one more time* into the presumed observable manifestations of these meanings, removing them even further from what was originally intended to be studied.

This is not to say that what is actually studied is unimportant. Operationalized, instrumental actions may be significant for any number of reasons. The point here is that what is actually studied should be represented accurately. Moreover, if researchers want to actually study religious practices, they may need to turn to alternative research methods, such as qualitative investigations, that put less emphasis on observables when studying unobservable (privately experienced) phenomena. Before we attempt to solve these problems, however, we need to illustrate their manifestation in the psychology of religion literature. Two examples are described, one a methodologically sophisticated study of theistic prayer and the other a rigorous physiological investigation of nontheistic meditation, both authored by leading researchers.

Prayer Study

Frank Fincham is a leading Western researcher on the practice of theistic prayer. One of his recent and more sophisticated studies (Fincham, Lambert, & Beach, 2010) is entitled “Faith and unfaithfulness: Can praying for your partner reduce infidelity?” As the first word in the title suggests, Fincham and his colleagues are concerned with people of “faith,” those who “profess some religious faith” and “belief in God” (p. 1). As this title also implies, the primary purpose of the study was to evaluate whether this kind of theistic prayer can cause lower levels of infidelity. This investigation used a sophisticated combination of two types of methods, correlational and experimental (across three smaller studies). The first method attempted to assess participants for their ongoing prayer and infidelity to find out if the two are correlated. The second method randomly assigned participants either to pray for their partner’s well-being or to engage in “positive thoughts” about their partner in order to see which approach, if any, reduced the participant’s infidelity.

Instrumentalism. The title of the study also betrays the instrumental treatment of prayer. Prayer is treated as an instrument that can make the person who prays more faithful, which the researchers explicitly connect to that person’s marital satisfaction and individual happiness. Prayer is a tool, something that is conceived in terms of whether it is effective for the user of the tool. The question the investigators ask is a specifically instrumental question: is prayer effective for keeping the person who prays faithful (p. 9)? If anything, the researchers criticize psychologists for not being *more* instrumental about “spiritual activities,” and thus “limiting their understanding of the impact of this behavior on potentially important outcomes” (p. 1).ⁱⁱ

Now there is no question that some people in the West, including many religious people, view prayer in this instrumental fashion, especially in what is sometimes labeled “petitionary

prayer.” In this sense, a study of instrumental prayer is not without significance. Still, there is no discussion of this particular instrumental use of prayer in the article, and there is no distinction made between this purpose for prayer, which is for the benefit of the practitioner, and the prayer of many truly theistic people, which is for the benefit of their God. The *Dictionary of the Bible* specifically defines prayer as “the act of communicating in words or in silence with the transcendent God” (Browning, 2011/1997). In fact, this reference source specifically denies the instrumental conception of prayer that Fincham et al. endorse: “prayer is not regarded as a method for compelling God to act but for asking that his will be done and his kingdom come.”

Even the notion of petitionary prayer is not instrumental in nature, though again, we recognize that many people may treat it this way, especially given the popularity of instrumentalism in the West. However, the specifically *religious* meaning of petitionary prayer is rarely instrumental. For example, as the *Concise Oxford Dictionary of the Christian Church* describes, petitionary prayer is understood in the “broader sense to mean any raising of the heart to God” (Livingstone, 2011/2000). Such prayer is an admission that people “are dependent on some higher power outside their control” (Livingstone, 2011/2000). In the *Encyclopedia of Religion*, all prayer, including petitionary prayer, is “an elevation of our soul to God... in order to grow in holiness for His glory” (Bowker, 2011/1997). Please note that this last phrase “to grow in holiness” is *not* intended for *our* glory, but for God’s glory. In other words, even petitionary prayer is not for the sake of practitioners, but for the sake of their God.

This meaning obviously differs considerably from the Fincham et al. (2010) study, where prayer is not only for the sake of the practitioner but also abstracted entirely from its theistic context. If these investigators are interested at all in the prayers of people who, as they put it,

“profess some religious faith” and “belief in God” (p. 1), then they have missed the mark by a wide margin already, and this says nothing about operationalism, our next topic.

Operationalism. This instrumental movement away from the meaning of many theistically religious people is not the only modification of what was intended for study. Fincham’s instrumental understanding of prayer is then operationalized, so that it can be studied using psychology’s favored epistemology, a narrow brand of empiricism. This empiricism is a philosophy that contends that only the sensorily experienced, or more commonly, the publicly observable is scientifically studiable. This epistemology is at variance with the epistemologies of many qualitative methods, which might better suit a study of unobservables. Still, many Western psychologists assume that narrow empirical methods are the *most* scientific of methods available, hence the presumed need to convert the unobservable (or privately experienced) meanings of the religious practitioner into quantitative observables.

In the case of the Fincham et al. (2010) study, various strategies are deployed to move prayerful practices away from their theistic, qualitative, and unobservable origins and toward the natural, quantitative, and observable parameters of empiricist epistemology. Let us take up each aspect in turn. First, the empirical investigator must remove religious prayer from its theistic meanings and convert it to the more therapeutic and natural world. Part of this modification is the instrumentalism we just discussed. However, it is also important to remove any theistic residue from this instrumental process by offering alternative secular or therapeutic mechanisms for how prayer could scientifically operate. Fincham, accordingly, suggests an entire theory to explain the power of prayer, replete with secular “mechanisms” (p. 10), such as cognitive schema salience (p. 3). Even specifically theistic elements of prayer meanings are naturalized,

such as when the researchers assume that the perception of a “deity” could be “considered (the ultimate form of) social support” (p. 2).

A second move in the operationalization of a religious concept is its quantification. Although there are both qualitative and quantitative aspects to prayer, its qualitative aspects are typically ignored, as in this passage: “Prayer is an important aspect of religious worship, the frequency and content of which may be targeted for experimental manipulation” (p. 2). Although prayer, as we noted earlier, can be expressed without any words, the quantitative requirements of method lead the researchers to focus on the “frequency and content” of prayer only, not because the investigators find these aspects to be central to prayer, but because they can be experimentally manipulated and counted. The import of a person’s quality of prayer is not even considered, despite admonitions from religious leaders and scripture.ⁱⁱⁱ

As a third aspect of this operationalization, this quantitative emphasis needs to be combined with observability. In this respect, the investigators used the common strategies of self-report, observer report, and Likert-type scales. Participants and those watching their behavior are not only supposed to know and be able to report the meanings of the participants’ prayers and infidelity observably (literally by circling a number), participants and those observing them are also supposed to translate these meanings into the language of numbers. Because observability and quantification are method requirements, the researchers never question the skills of the participants or observers to translate their meanings into numbers. Yet surely one *could* question just how good *anyone* is at this translation process – “speaking numbers.” Moreover, how good are the observers at interpreting the participants’ commitment to their partner from watching them interact and then translating those experiences into numbers? Prayer and infidelity are complex meanings, and few of the participants or observers would be

fluent in speaking numbers. All in all, the circling of a number could be a considerable semantic distance from the meanings of prayer and commitment that study participants actually experience.

Actual vs. Intended. The results of studying these operationalizations were summed up in fairly simple terms: “prayer for partner significantly predicted infidelity” (p. 4?)^{iv}. However, this interpretation is problematic at best, because “prayer for partner” and “infidelity” were not what was *actually* studied. Taking into account the myriad operationalizations involved, the researchers should have said something like the following:

The circled numbers that *we* [the researchers] believe were reflective of the meanings of prayers were correlated with the self-reported frequencies of activities that we (the researchers) considered to be “infidelity” in the past month. Whether our participants considered these activities to be infidelity we do not know, and whether they reported their unfaithfulness or prayer meanings accurately we also do not know.

Did the researchers study what they intended to study? Their intended subject of study is clear: the prayers of the people of “faith,” those who “profess some religious faith” and “belief in God” (p. 1). However, Fincham et al. not only instrumentalize these praying practices without any justification; they also study only the presumed quantifiable observables of these practices, as though they represent the practices as a whole, again without any justification.

These problems of validity do not prevent the researchers from providing advice to religious people who pray. Fincham et al. believe they have discovered several “practical insight[s]” (p. 9) and offer spiritual persons ways to “enhance the behavioral impact of prayer” (p. 9), and thus get more bang for their prayer buck. Again, this instrumental advice is completely contrary to theistic understandings of prayer. Theistic believers who pray cannot

simply “enhance” their “behavioral impact,” because their God is also involved. These meanings are from another (instrumental) worldview entirely, with the worldview of a majority of people who pray going completely uninvestigated.

Meditation Study

As another example of the problems of instrumentalism and operationalism, we now consider a study of meditation, specifically meditation from the nontheistic side of religious practices^v. Also, to illustrate another genre of methods, we consider a physiological method conducted by the noted neuroscientist, Antonio Damasio. Damasio and his colleagues (Khalsa, Rudrauf, Damasio, Davidson, Lutz, & Tranel, 2008) intend for their investigation to be a study of uniquely religious meditation, specifically from the traditions of Tibetan Buddhism and Kundalini Yoga. To their credit, they recruited exemplar meditators from both of these traditions as study participants. They predicted that experienced meditators would have a heightened awareness of internal bodily sensations. When they found no such heightened awareness, they had no trouble applying their study’s findings directly to those religious traditions, as if the researchers assumed that they directly studied the meditations of those traditions. Let us see if they did, first with the notion of instrumentalism in view, and then with a focus on operationalism.

Instrumentalism. Similar to the Fincham study, the very first move of the investigators was to instrumentalize the religious practice of meditation. As soon as the first sentence of their publication, meditation is instrumentalized in terms of the “ends” cared about by Western psychologists, “emotional balance and well-being” (p. 671). And these ends are not merely the *by-products* of meditation; they were considered the *reasons* that many religious people practice meditation, for their own health and well-being. Why else would the researchers be studying

these practices, the Western researcher seems to say? As the researchers describe, there has been “a notable increase in the therapeutic application of meditation as a complement in alternative medicine” (p. 671). This instrumental benefit, therefore, is the primary justification for the research (first paragraph, p. 671). But is it really what the meditators from these traditions desire or experience?

If prominent religious leaders from these traditions are any indication, this instrumental interpretation of these traditions’ meditation practices is dubious. In some forms of Buddhism, for instance, meditation is intended “to enable the practitioner to bring all of his or her attention upon that Buddha” (Luk, 2011/1964). Other forms are interested in a “dual path of emptiness and existence,” where meditation allows the mind “to remain peacefully in emptiness, culminating in the attainment of samādhi” (Yuan, 2011/1986, p. 55). Samadhi is the acceptance of our self and our condition, not Western notions of physical health. Similarly, “in Hinduism the reciting of slokas and mantras is employed to tranquilize the mind to a state of receptivity,” not to bring about Western notions of happiness (Yuan, 2011/1986, p. 55).

When instrumental ends *are* discussed in the literature on Buddhism and Hinduism, many religious scholars view these as “side-products” only (Story, 2010). Consider this quote from Francis Story (2010): “not only are [instrumental ends] not its goal, but they are hindrances which have to be overcome.” Indeed, as Story (2010) continues, “the root-cause of rebirth and suffering is *avijja* conjoined with and reacting upon *tanha*. These two causes form a vicious circle; on the one hand, concepts, the result of ignorance, and on the other hand, [individual] desire arising from concepts”. From this quote, individual desire, one of the driving forces of instrumentalism, is problematic to meditation. Clearly there is a mismatch between the conception of meditation in this study and the conception of meditation in these traditions.

Operationalism. As we move now to operationalism, it is important to understand the holistic nature of meditation. “Individual religious practices,” declares Nelson (2009), “are best understood as part of a way of life that unfolds within the context of particular religious communities,” and meditation is no different (p. 472). Even Damasio and his colleagues admit that meditation is “conceptualized as a family of complex emotional and attentional regulatory training regimens” (Khalsa et al., 2008, p. 671). Meditation is thus a holistic practice or “way of life,” which includes the context in which it occurs. Yet, as we will see, the basic logic of operationalism is to reduce and abstract such practices away from their contexts, *not* because this reduction preserves and protects the phenomena studied, but because the method says to do so. In other words, the methods ultimately drive the measurements selected, not the nature of the phenomena studied.

What, then, is the logic of operationalism in this particular case? What moves these researchers on meditation to select the specific measurements they ultimately use to study this religious practice? First, as with the prayer study, operationalism requires the reduction of such practices to one or more component parts that lend themselves to methods of quantitative observation. The investigators, accordingly, decided to focus “attention to internal body sensations as a component of the practice” (p. 671). It does not matter whether this reduction to a component of the practice is a part of the practice itself; no justification is provided. It only matters that it is a requirement of the method. As mentioned, many scholars of Buddhist and Yogic meditation practices would assert that these components are not the same in isolation from other “components” (e.g., Nelson, 2009). Method, however, drives this study, not the meanings of the practices that the investigators are attempting to study.

What then are the bodily sensations that the researchers wish to focus upon? Here, they seem concerned, at least to some degree, with the religious meaning itself, because they argue that many religious traditions assert a greater awareness of “thoughts and emotions” with meditation (671). However, without justification, they translate the more specific events of “thoughts and emotions” into “interoceptive awareness.” Interoceptive awareness is surely part of the meditators’ thoughts and feelings, but it is also safe to assert that the two are not identical. Again, a definitional or operational move has occurred that is not justified by the nature of the phenomenon itself.

A further definitional move occurs when interoceptive awareness is considered heartbeat perception, as if heartbeat perception is an indicator of “thoughts and emotions.” Again, heartbeat perception is not selected because it is integral to these religious traditions; heartbeat perception is selected because it is easy to measure and fits methodological norms. As Damasio and his colleagues describe, “heartbeat perception is considered the standard and preferred method for the noninvasive assessment of interoceptive awareness, and factors modulating awareness of cardiac sensations have been extensively studied” (p. 672). In other words, the investigators’ rationale for focusing on heartbeat perception is a method rationale—it is “preferred for assessment” because it is “noninvasive” and has been “extensively studied.” It is *not* preferred because it conforms most closely to the phenomena or meanings of those who practice meditation from these traditions.

The next operational question for these researchers is: how do we measure heartbeat perception? The researchers chose a task that involves the judgment of external tones that were triggered by heart contractions. Again, this selection was not guided by what was most congruent with the meaning or practice of meditation, but rather what was most easily measured.

Consider this quote from the study: “although there are several techniques for assessing heartbeat perception, the most commonly used methods are heartbeat detection and heartbeat tracking” (p. 672). This quote is not referring to the methods “commonly used” when studying meditation practices; this quote is referring to what is most commonly used in general, across all sorts of physiological studies. Again, the method drives what is studied, not the topic of the study.^{vi}

One way of summing up what is actually studied, given the study’s original topic, is to follow this method logic: Buddhist and Yogic religious practices of meditation → (translated into) practices that are a means to the Western individualist ends of happiness and health → a focus on one component of those practices, awareness of thoughts and feelings → interoceptive awareness → heartbeat perception → the judgment of external tones. It is, of course, possible that the end of this chain of logic is inherently or essentially related to its beginning, but there is no way to know whether this is true because the relations at each link in the chain are not themselves scientifically observable. Moreover, the possibility of the beginning and ending being substantively related is rendered particularly unlikely when the logic of the chain is guided at virtually every step by the ease and tradition of the measurements used, not by the relation of these measurements to the meditation under study.

Actual vs. Intended. This means, therefore, that the probability of a potential mismatch between the actual variables studied and the variables intended for study is quite high. If this is true, then any application of the study’s findings to the actual meditative practices of these traditions should be made with great caution, if not abandoned all together. However, the researchers assert that they have studied a “core feature of meditation” (p. 676). Indeed, “the

current findings,” the investigators conclude, “do not support the hypothesis that experienced meditators would display increased interoceptive awareness” (675).

There is no discussion about whether the specific heartbeat detection tasks actually represent this awareness or whether we should expect these “experienced meditators” to have any skills at all in these arcane tasks. Indeed, there is no discussion about whether we can reasonably expect these participants to maintain their meditation with the constant noise of external tones. To their credit, the investigators do question whether the Tibetan Buddhist tradition addresses such tasks, but they, in the end, have no trouble interpreting their findings as directly relevant to this tradition.

Prospects

What can be done about these types of problems? First, it is important to recognize that the problems of these two studies are not isolated occurrences. Fincham and Damasio are leading Western investigators. Their articles are in first-rate journals, and they were published quite recently. Consequently, any solution to these problems may need to encompass an entire genre of research, perhaps much of the psychology of religion itself. In that light, we believe the solution to be at least twofold. Once these problems are better known, perhaps more solutions will come to the fore. In the meantime, our first recommendation concerns our unexamined reliance on a narrow brand of empiricism as the main epistemology of science. The second solution asks whether there are immediate strategies, given this reliance, to bridging the chasm between what is actually studied and what is intended to be studied.

The first solution is to avoid viewing the epistemology of traditional empiricism (and positivism more broadly) as the *only* approach to investigating religious phenomena. As other methodological analyses have described (e.g., Slife & Melling, in press), quantitative methods

that use this epistemology certainly have their place in the psychology of religion. Even religious practices have their countable and observable aspects. However, as these two exemplar studies illustrate, the need to observe and quantify meanings, as any traditional empirical method requires, will inevitably abstract and reduce the meaning of religious practices, especially *as practiced*, in such a way that they are almost unrecognizable. Many qualitative or interpretive methods are surely better suited to these types of investigative questions, precisely because these approaches to inquiry were specifically formulated to explore such deep meanings.

The second solution is perhaps more immediately practical. Given our reliance on empirical and quantitative methods, at least for the foreseeable future, what can be done right away? Foremost, researchers need to be more circumspect about the relation between what they intend to study and what they actually study. This means, especially, becoming more aware of how they make method decisions, particularly how they conceptualize religious phenomena and how they operationalize them. At the very least, it would be helpful for method decisions to be explicitly supported by justifications that keep the original topic or meaning in view. Ease of measurement and traditions of operation are not sufficient rationales without some explicit connection to the subject under investigation.

To make this connection, we see no substitute for knowing well the actual traditions, meanings, and practices under study. This knowledge implies not only a general appreciation for the richness and thickness of many religious meanings and phenomena, but also a theological education of sorts on the religious traditions and practices themselves. If researchers view their methods as objectively “mapping” the pristine nature of reality, including religious reality, they will never see the need to appreciate the depth and breadth of religious meanings. Psychology of religion investigators must learn, instead, that their methods, all methods, are *interpretations* of

the reality they seek to know. Perhaps most importantly, these investigators should know the nature of these interpretations, so they can account for them in reporting their results.

Instrumentalism is just one example of this kind of hidden interpretation that needs to be monitored as method decisions are made and results are described.

How might this increased awareness of meanings and methods make a difference in the method decisions of the exemplar studies we have reviewed? First, the researchers would not have immediately presumed an instrumental conception of the practices. Instead, they might have studied and reported on the many meanings, instrumental and non-instrumental, that religious people experience and practice. Fincham and his colleagues might have discussed how, for many people of faith, prayer is a form of communion with God, a way to seek God's will, or a way to glorify God, along with instrumental conceptualizations. Damasio and his colleagues might have acknowledged the non-instrumental meanings of meditation, like emptying of self, compassion, and acceptance, along with possible instrumental meanings. Given their richer understandings of these practices, they could have decided to conceptualize the practice non-instrumentally in their research and study it in a different manner. Or, if they still chose to conceptualize it instrumentally, they might have provided a justification for their choice that acknowledged its narrower focus and any loss of applicability to religious people.

As a second application of our twofold solution, these investigators would not have immediately adopted a traditional empirical method of study, along with the quantitative operationalism it requires. Instead, they would have evaluated the gains and losses of different methodologies in light of the consequences to the phenomenon of interest and its meanings. Fincham and his colleagues might have considered what meanings are gained and/or lost by participant descriptions of petitionary prayer in their own words versus their circling a number

on a scale. Damasio and his co-authors might have evaluated the advantages and disadvantages of qualitative descriptions of experienced meditators' awareness of thoughts and emotions against quantitative measures of heartbeat detection. Their evaluations may have led them to decide that a qualitative study of the phenomena would have been closer to what they intended to investigate. However, if they still decided to follow an empirical method with quantitative operationalizations, they would now be in a position to provide a justification for their decision that included an acknowledgment of their decision's consequences for what was actually studied.

Finally, an explicit comparison should be drawn in the discussion section of the research report between what was meant to be studied and what was actually studied. This comparison should include important cautions about what can now be said about the topic intended, given the results of the study. Specifically, what are the implications of these results, with a view to the differences between the actual and the intended? Without an explicit answer to this question, there is a great danger that many readers will not understand the problems involved and misrepresent the study's relevance and significance.

References

- Bishop, R.C. (2007). *The philosophy of the social sciences*. New York: International Continuum Publishing.
- Bowker, J. (2011/1997). *Concise Oxford dictionary of world religions*. Retrieved March 4, 2011 from Encyclopedia.com. <http://www.encyclopedia.com/topic/Prayer.aspx#2>. *Encyclopedia of Religion*.
- Browning, W. (2011/1997). *A Dictionary of the Bible*. Retrieved March 04, 2011 from Encyclopedia.com: <http://www.encyclopedia.com/doc/1O94-prayer.html>. *Encyclopedia of Religion*.
- Fincham, F., Lambert, N., & Beach, S. (2010). Faith and unfaithfulness: Can praying for your partner reduce infidelity? *Journal of Personality and Social Psychology*, August 16, doi: 10.1037/a0019628.
- Fowers, B. (2000). *Beyond the myth of marital happiness*. San Francisco: Jossey-Bass.
- Khalsa, S., Rudrauf, D., Damasio, A., Davidson, R., Lutz, A., Tranel, D. (2008). Interoceptive awareness in experienced meditators. *Psychophysiology*, 45, 671-677.
- Livingstone, E. (2011/2000). *Concise Oxford dictionary of the Christian church*. Retrieved March 4, 2011 from Encyclopedia.com. <http://www.encyclopedia.com/topic/Prayer.aspx#3>. *Encyclopedia of Religion*.
- Luk, C (1964). *The Secrets of Chinese Meditation*. York Beach, ME: Samuel Weiser, Inc. Retrieved March 4, 2011 from http://en.wikipedia.org/wiki/Buddhist_meditation.
- Nelson, J. (2009). *Psychology, religion, and spirituality*. New York: Springer.
- Slife, B.D., & Melling, B.S. (in press). Method decisions: Qualitative and quantitative modes of inquiry in the study of religious phenomena. *Pastoral Psychology*.

Slife, B. D., Wiggins, B. J., & Graham, J. T. (2005). Avoiding an EST monopoly: Toward a pluralism of methods and philosophies. *Journal of Contemporary Psychotherapy*, 35, 83-97.

Story, (2010). *Buddhist meditation*. Retrieved March 4, 2011 from

<http://www.accesstoinsight.org/lib/authors/story/bl015.html>.

Yuan, M. (1986). *Mountain: A Seven Day Intensive in Ch'an Training with Master Nan Huai-*

Chin. Retrieved March 4, 2011 from http://en.wikipedia.org/wiki/Buddhist_meditation.

ⁱ We would also contend that the relation itself, even if between two observables, is not observable (Slife, Wiggins, & Graham, 2005).

ⁱⁱ God himself, according to these researchers, is a useful means for helping marital relationships produce individual happiness (p. 3).

ⁱⁱⁱ From this empirical perspective, if the quality of prayer is an issue, it can be evaluated through the quantity of prayer. For example, the investigators surmise that the “regular practice” of prayer will “serve to keep positive relationship goals salient” leading to positive “cognitive schema” (p. 2), as if mere repetition is an indicator of prayer’s quality.

^{iv} The researchers discuss “the prayer’s effect on relationship” in the experimental portion of their publication (p. xx), as if prayer is a natural cause and relationship outcome is its necessary effect. This is, after all, the logic of experimental design. However, a truly theistic prayer does not presume the causal efficacy of the prayer itself. As virtually all theists know, their prayer is provided to a God who may or may not grant the prayer request, or may grant it in a way the person providing the prayer (or the researchers) may not know. For example, from the perspective of the study participants, they were praying for the well-being of their partners, not some beneficial effect for themselves. In this sense, the partner could have been blessed in some important manner *without* it affecting or being perceived by the participant of the study *at all*. In other words, the prayer could have been answered in many ways that were never considered or measured. The instrumentalism of the investigators blinded them to these types of outcomes, because the only outcomes that counted for them were the ones that directly benefitted the person who prayed.

^v “In general terms,” declares the *Encyclopedia of Religion*, “it is meditation rather than prayer that is recommended as the main spiritual practice of Buddhism” (p. xx).

^{vi} Even during the measurement itself, the religious traditions were rarely respected. Consider this quote: “During the second heartbeat detection block (HB2), participants were instructed to practice a yogic breathing pattern” (p. 673). If this breathing pattern (the only meditative instruction given) is truly Hindu in origin, how would the Buddhist participants relate to it? Even if they performed it satisfactorily, as a manipulation check, they might not be able to relate to it in terms of its meaning within their religious tradition. It’s just a breathing pattern to the investigators; religious meanings are almost irrelevant.