

# Religious Problem-Solving Styles within an American Religious Ideological Surround

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## Abstract

In a previous Iranian investigation, comparative rationality analysis procedures associated with the ideological surround model of psychology and religion examined the influence of Muslim religious rationalities on responding to religious problem-solving style scales. This study extended the analysis to 306 mostly Christian American university students. As in Iran, the collaborative problem-solving style was consistent with, and the self-directing style was inconsistent with, religious commitments and psychological adjustment. The deferring style had ambiguous implications in Iran, and the same was true in the United States, albeit in different ways. Religious rationalities mediated problem-solving style relationships with other variables in a manner documenting the complexity of American religious perspectives. Most generally, these data suggested that empirical attention to the incommensurable rationalities of religions and the social sciences can promote deeper insights into both.

## Keywords

Ideological Surround Model – incommensurable rationalities – religious and psychological adjustment – religious problem-solving styles – United States

Both conceptually and empirically, an ideological surround model (ISM) has for decades advanced the argument that at least some social scientific research

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into religion should acknowledge and then move beyond the challenges of postmodernism (Watson, 1993, 2011, 2014; Andrews, Watson, Chen, & Morris, 2016). Postmodernism rests upon a realization that no social rationality can command universal acceptance as objective. The ISM most basically assumes that this postmodern relativism is a cultural reality that a fully relevant social science should 'objectively' address.

### Incommensurable Rationalities and Postmodernism

Social rationalities organize communal life relative to a shared ultimate standard (Taylor, 2007). For theistic religious communities, that standard will be some vision of God. For social scientific communities, the standard instead will typically be some reading of nature. Both communities will approach greater rationality to the extent that their thought and practice approach the normative demands of their standards. Such progress can occur through advancements in the conduct of communal life or through deeper insights into the standard. Supernatural religious and naturalistic social scientific rationalities can, but need not always be incompatible in their implications. They, nevertheless, will always be incommensurable. Rationalities are incommensurable when they lack a common metric of evaluation (MacIntyre, 1988). Ultimate standards are 'ultimate,' and thus cannot be held accountable to a higher 'more ultimate' standard. The absence of a shared standard for judging ultimate standards means that religious and social scientific rationalities will necessarily operate within a surround of incommensurable ideological assumptions.

Incommensurability as a problem can remain hidden and seem unimportant when religious and social scientific rationalities seem to agree. Both may agree, for instance, that committed marriages are a social good. They, nevertheless, will agree for different reasons. Within at least some Christian ideological surrounds, those reasons will have foundations in verses from Genesis, but within the social sciences, rationality may rest instead upon some nature-based form of functionalism. Agreement between incommensurable rationalities, therefore, will occur at the level of inferences derived from ultimate standards, rather than at the level of the ultimate standards themselves (Ghorbani, Watson, Amirbeigi, & Chen, 2016).

That agreement in derivative inferences should not obscure the challenges of incommensurability becomes clearer with the addition of an adjective to the conclusion about committed marriages. The claim that committed *homosexual* marriages are a social good can produce sometimes acrimonious

disagreements at the level of derivative inferences based upon the very same ultimate standards. The postmodern complexity of the situation becomes even clearer with the realization that at least some Christian visions of the ultimate standard will support the derivative inference that committed homosexual marriages are a social good (e.g., Alison, 2001). In the absence of a universally acceptable ultimate standard for judging ultimate standards, arguments against one rationality within the surround of another cannot rest upon an indisputable objectivity that commands assent across communities. To state the point more bluntly, no objective solution exists for resolving such problems.

Incommensurability, therefore, identifies postmodern relativism as an undeniable logical and empirical reality. The ISM essentially argues that a rescue of objectivity within pluralistic cultural contexts requires an objective sensitivity to that reality without making relativism normative. Relativism as an ultimate standard is a nonsensical absolutism that is logically inconsistent with relativism. Postmodernism must be admitted, but then must be overcome through objective understandings of its cultural dynamics.

Pluralism requires a 'future objectivity' (Nietzsche, 1887/1967) defined not as an exclusive and naïve conformity to any specific ultimate standard, but rather as a post-postmodern perspective that brings incommensurable rationalities into dialogue (Ghorbani, Watson, Tavakoli, & Chen, 2016). In this process, research programs based upon naturalistic social scientific rationalities should continue to make critical contributions to the study of religion. On the other hand, the supernatural rationalities of religions should also use empirical methods to clarify not only religions, but the social sciences as well (Watson, 2011; Johnson & Watson, 2012). In addition, however, the post-postmodern 'objectivity' advocated by the ISM should construct dialogical 'spaces' between incommensurable rationalities based upon derivative inferences about which agreements are possible. Such spaces will need to include agreements about how to address derivative inferences about which disagreements seem inevitable. Post-postmodern forms of commitment could still be as exclusive as ever, but would be guided by increasingly sophisticated rather than naïve understandings of the cultural dynamics of pluralism.

In summary, incommensurable rationalities construct and interpret social life relative to different ultimate standards. The absence of a universally agreed upon ultimate standard for adjudicating between ultimate standards defines the postmodern condition. The ISM most basically assumes that the pluralistic cultural context requires a post-postmodernism that objectively constructs spaces for truthful dialogue between incommensurable rationalities (Watson, 2006).

### Comparative Rationality Analysis

Comparative rationality analysis is one ISM method for bringing incommensurable rationalities into dialogue (Watson, 2010). With these procedures, research participants respond to a psychological scale administered and scored per regular instructions; and then later, they rate these same questionnaire items in terms of the degree to which each is consistent or inconsistent with personal religious beliefs. Procedures, therefore, assess the meaning of a construct relative to the social scientific rationality that led to the construction of a scale in the first place and relative to the religious rationality of a sample. Interpretations of the very same measure within the ideological surrounds of these two rationalities can then be brought into dialogue through both macro-rational and micro-rational levels of analysis.

Macro-rationality analysis assesses the ideological meaning of a full psychological scale. With this procedure, a sample assesses the implications of all items in an instrument relative to personal religious beliefs. A summing up of religious consistency ratings will thus quantify a religious interpretation of the full scale by a sample. Relationships between the original scale and its macro-rationality score will be positive if religion promotes systematic responding to an instrument. Systematic responding would appear if religious commitments encouraged either ideological agreement or disagreement with items. It is important to realize, therefore, that a positive correlation between a scale and its macro-rationality does not prove that a psychological scale measures a construct that is compatible with religious commitments. A positive correlation could mean that religious participants score high on both and that the two are in fact compatible, but it could also mean that religious individuals score low on both and that the two record a construct that is incompatible with religious commitments. Evaluation of whether incommensurable rationalities are compatible will require an examination of relationships of the original scale and macro-rationality scores with other measures.

Micro-rationality analyses begin in an opposite direction, looking at each individual item separately rather than at the full scale. This procedure examines the possibility of scoring the items of an instrument in terms of a religious rather than a social scientific rationality. If derivative inferences of the two rationalities are in full agreement, religious and social scientific scorings of a statement will be identical. If disagreements appear, the original scale taken under standard instructions can be scored oppositely to reflect a religious rather than a social scientific perspective. For example, strong agreement with a statement expressing a psychological construct might be scored as 4 along a 0 to 4 Likert scale. If that statement proved to be inconsistent with religious

commitments, the alternative religious scoring would be reversed and would be 0 instead.

In micro-rationality procedures, religious assessments of each statement use 5-point response options ranging from 'very inconsistent' to 'very consistent' with personal religious beliefs. A series of  $\chi^2$  tests can then examine the frequencies of these responses to determine if a sample evaluates an item as relevant to religious commitments. A relevant statement would be ideologically consistent if it proved to be significantly *not* inconsistent and/or significantly consistent with religious beliefs. On the other hand, an item would be ideologically inconsistent if it was significantly inconsistent and/or significantly *not* consistent with religious beliefs. Scorings of ideologically inconsistent statements could then be reversed to bring them into conformity with sample religious beliefs. A combination of these re-scorings with any ideologically consistent items would then express a construct relative to a religious rather than a social scientific rationality. Neutral statements that failed to be either inconsistent or consistent with religious beliefs would be ignored as ideologically irrelevant. Rationalities expressed by the original social scientific and by the alternative religious micro-rationality scorings can then be compared in their relationships with other variables. The empirical question is whether the religious or the social scientific scorings of the very same responses yield a more valid description of religious and psychological functioning.

### Religious Problem-Solving in Iran

Among studies using comparative rationality analysis was a recent examination of religious coping styles in Iran (Ghorbani, Watson, Saeedi, Chen, & Silver, 2012). Religious problem-solving style scales (Pargament, Kennell, Hathaway et al., 1988) operationalize three forms of religious coping. A self-directing style involves efforts of individuals to take full responsibility for confronting problems without God's help. The underlying rationale of this measure is, "God is viewed as giving people the freedom and resources to direct their own lives" (Pargament et al. 1988, p. 91). An opposite approach appears with the deferring style. Here, the religious person defers all responsibility to God and assumes no active role in the problem-solving process. The collaborative style includes aspects of the other two in that the individual combines personal responsibility with a submission to God's guidance.

Comparative rationality analysis in Iran seemed potentially useful in examining the dynamics of Muslim problem-solving. Collaborative and deferring

styles suggest religiously compatible derivative inferences involving a need and indeed a Muslim obligation to maintain a close relationship with God. The deferring style was of special interest. The word 'Islam' literally refers to a 'submission' to God. Would the deferring style be especially germane to the Muslim rationality of submission? On the other hand, the ideological implications of the self-directing style seemed complicated. Researchers developed this scale to measure an adaptive humanistic religion of personal freedom, but relationships with poorer mental health have argued against this interpretation. The self-directing style has turned out to be an ideologically ambiguous form of coping that, either theoretically or empirically, could reflect a sense of abandonment by God, belief in a supportive deistic God, lack of any interest in God, or even perhaps atheism (Phillips, Pargament, Lynn, & Crossley, 2004). Hence, the self-directing style might be read differently within different ideological surrounds, perhaps adaptive within atheistic and maladaptive within theistic ideological surrounds. The obvious possibility, therefore, was the self-directing style would be ideologically inconsistent with Muslim commitments.

In Iran, the collaborative and self-directing styles operated oppositely. Macro- and micro-rationality analyses confirmed the collaborative style as consistent with a Muslim ideological surround. This style also predicted religious and psychological adjustment. Positive correlations of the self-directing style with macro-rationality scores confirmed a systematic religious influence on responding. Micro-rationality assessments, nevertheless, demonstrated that all self-directing items were incompatible with Muslim commitments. Relationships observed for the original, the macro-rationality, and the micro-rationality re-scored expressions of the self-directing style all pointed toward a more problematic form of Muslim coping as measured by the original scale.

The deferring style proved to be complex. Given that 'Islam' means 'submission,' it was unsurprising that the deferring style correlated positively with its macro-rationality score. On the other hand, micro-rationality assessments identified deferring style items as compatible, incompatible, and neutral relative to Muslim beliefs. Psychometric analysis of the micro-rational re-scorings of the original scale also suggested that the deferring style contained an internal contradiction in which a faith in God solving problems factor masked the influences of a rejection of thoughtless religious coping. Both factors predicted relative mental health, but neither correlated with more adaptive motivations for being religious. Rejection of thoughtless religious coping did, however, display an inverse connection with an extrinsic social religious orientation that can predict psychological maladjustment in Muslims (Ghorbani, Watson, & Khan, 2007).

## Present Study

In the present study, comparative rationality analysis procedures tested the hypothesis that religious problem-solving styles in the United States would display rough parallels with results observed in Iran. In other words, the collaborative style should be ideologically consistent with American religious beliefs and should predict religious and psychological adjustment. Items from the self-directing style should be inconsistent with religious commitments in micro-rationality analyses and should point toward more problematic forms of religious and psychological functioning. Finally, the deferring style should have ambiguous implications. Of course, the United States and Iran represent strikingly different cultural contexts. Would the self-directing style have more positive meanings in the presumably more individualistic West than in theocratic Iran? Would the deferring style be even less consistent with religious commitments and mental health in an American society that does not seem especially supportive of Islamic or any other form of submission? Findings for the religious problem-solving styles in the United States suggest that the answer to both questions should be no (e.g., Kaiser 1991; Webb & Whitmer 2001; Webb, Chickering, Colburn, Heisler, & Call, 2005). Comparative rationality analysis made it possible to examine that possibility formally.

Efforts to clarify the rationality of religious problem-solving styles required additional measures for assessing religious and psychological functioning. Religious orientation scales recorded three motivations for being religious (Gorsuch & McPherson, 1989). With an intrinsic orientation, an individual seeks to make religion the master motive in life. The extrinsic personal orientation involves a use of religion to achieve a sense of personal well-being. Underlying the extrinsic social orientation is an attempt to obtain desired social outcomes through religious participation. Studies in Iran and the United States suggest that the intrinsic and extrinsic personal orientations predict more adaptive religious and psychological functioning. In comparison, the extrinsic social orientation is weakest among the three motivations and displays equivocal, sometimes negative mental health implications (Ghorbani et al., 2007; Watson, Chen, & Ghorbani, 2014). With regards to an examination of psychological functioning, integrative self-knowledge (Ghorbani, Watson, & Hargis, 2008) and self-esteem (Rosenberg, 1989) scales assessed adjustment, and the depression and anxiety scales of Costello and Comrey (1967) recorded maladjustment.

Finally, the ISM assumes that the meaning of psychological constructs is always processed through the perspectives of social rationalities and thus is always ideological to some degree. Associations between variables will,

therefore, at least partly reflect how a rationality interprets a construct. As in another recent investigation (Andrews et al., 2016), the present project used mediation analyses to test this hypothesis. Macro-rationality scores quantify the religious rationality of the three problem-solving styles. The expectation was that these three religious rationalities would at least partially explain the linkages of each style with other measures. Specifically, mediation analyses would essentially 'subtract out' the religious rationality of these three styles. If this subtracting out eliminated the association of a style with a measure, then religious rationalities would fully explain that relationship. If subtracting out reduced, but did not eliminate the connection, then religious rationalities would partly explain the relationship. If subtracting out had no effect on the connection, then religious rationalities would be irrelevant to the relationship.

Among other things, these mediation analyses offered a more holistic description of religious rationalities. Mediation results could be construct-specific such that explaining the effects of a problem-solving style could be limited to its specific macro-rationality. Only the collaborative macro-rationality, for example, might explain collaborative style relationships. Such outcomes would suggest a limited and conceptually pedestrian relationship between religious rationality and a social scientific construct. On the other hand, mediation might be construct-general such that the mediation of problem-solving style effects could extend to multiple macro-rationalities. Collaborative style effects might also be mediated by self-directing and deferring macro-rationalities. Such results would point toward more complex dynamics operating within religious rationalities.

## Hypotheses

In summary, this investigation used comparative rationality analysis to examine the expectation that religious rationalities underlying American responses to the religious problem-solving style scales would parallel results observed in Iran. Procedures tested four general sets of hypotheses.

First, items expressing the collaborative problem-solving style should be consistent with religious rationalities in micro-rationality analyses, and the Collaborative Style Scale and macro-rationality scores should predict religious and psychological adjustment. In other words, these measures should correlate positively with the intrinsic, extrinsic personal, integrative self-knowledge, and self-esteem measures and negatively with depression and anxiety. No prediction was made for the ambiguous extrinsic social orientation.



Second, items expressing the self-directing problem-solving style should be inconsistent with religious rationalities, and self-directing scale and macro-rationality scores should predict religious and psychological maladjustment. In addition, a micro-rationality re-scoring of the original scale should predict religious and psychological adjustment.

Third, the deferring style should be ambiguous in its religious rationality, religious adjustment, and mental health implications.

Finally, macro-rationality scores should mediate associations of all three religious problem-solving styles with other measures. Of interest was whether such mediation effects would be construct-specific or construct-general.

## Method

### *Participants*

Research participants were undergraduates enrolled in Introductory Psychology classes at a state university in the southeastern United States. On average, these 126 men, 177 women, and 3 individuals who failed to report their gender were 19.1 years old,  $SD = 1.5$ . Race was 75.2% White, 16.3% Black, 2.6% Hispanic, and 5.9% various other groups. As with another investigation conducted within the same time frame (Watson, Chen, Ghorbani, & Vartanian, 2015), attempts to simplify procedures for determining religious affiliation led to unexpected complications. Participants reported that they were 45.8% 'Other', 30.5% Protestant, 12.1% Catholic, 0.7% Muslim, 0.7% Buddhist, 8.1% atheist or agnostic, and 2.1% failing to respond. Studies conducted both before and after this project suggested that this surprisingly high 'Other' percentage primarily reflected Protestants who failed to understand these distinctions. The actual percentage of Protestants was likely around 70%. Two aspects of these data deserve emphasis. First, the sample was 88.9% religious and mostly Christian. Second, the focus of this project was an American religious ideological surround, which, of course, would be more diverse than an Iranian religious ideological surround. Procedures, therefore, included data from all participants in statistical analyses.

### *Measures*

All measures appeared in a single questionnaire booklet. Responding to all items occurred along a 0 to 4 Likert scale, and the scoring of each instrument involved the computation of the average response per item. Scales appeared within the booklet in the order of their descriptions below.

### Religious Problem-Solving

Twelve statements defined each of the three religious problem-solving styles (Pargament et al., 1988). Representative of the collaborative style ( $\alpha = .95$ ,  $M = 2.38$ ,  $SD = 1.02$ ) was the self-report, "When it comes to deciding how to solve a problem, God and I work together as partners." The self-directing style ( $\alpha = .95$ ,  $M = 1.60$ ,  $SD = 1.02$ ) found expression in such statements as, "After I've gone through a rough time, I try to make sense of it without relying upon God." An example of the deferring style ( $\alpha = .91$ ,  $M = 1.77$ ,  $SD = 0.88$ ) said, "I do not become upset or nervous because God solves my problem for me."

### Integrative Self-Knowledge

The integrative self-knowledge scale ( $\alpha = .81$ ,  $M = 2.61$ ,  $SD = 0.64$ ) used 12 statements to assess personal efforts to combine past, present, and desired future self-experience into a meaningful whole (Ghorbani et al., 2008). Indicative of this effort was the assertion, "If I need to, I can reflect about myself and clearly understand the feelings and attitudes behind my past behaviors."

### Religious Orientation

Gorsuch and McPherson's (1989) religious orientation scales recorded intrinsic (8 items,  $\alpha = .83$ ,  $M = 2.46$ ,  $SD = 0.85$ ), extrinsic personal (3 items,  $\alpha = .70$ ,  $M = 2.2$ ,  $SD = 0.96$ ), and extrinsic social (3 items,  $\alpha = .67$ ,  $M = 1.17$ ,  $SD = 0.88$ ) motivations for being religious. Best illustrating the Intrinsic Scale was the statement, "My whole approach to life is based on my religion." Most representative of extrinsic personal orientation was the self-report, "What religion offers me most is comfort in times of trouble and sorrow." The extrinsic social orientation appeared in such claims as, "I go to church mostly to spend time with my friends".

### Anxiety and Depression

The Costello and Comrey (1967) scales operationalized dispositional depression (14 items,  $\alpha = .93$ ,  $M = 0.78$ ,  $SD = 0.76$ ) and anxiety (9 items,  $\alpha = .80$ ,  $M = 1.58$ ,  $SD = 0.80$ ). A representative expression of depression said, "I feel sad and depressed". Illustrating anxiety was the assertion, "I'm a restless and tense person".

### Self-Esteem

The Rosenberg (1989) self-esteem scale included 10 items ( $\alpha = .89$ ,  $M = 2.97$ ,  $SD = 0.79$ ). A representative expression of self-esteem said, "I feel that I have a number of good qualities".

### Religious Rationality of Religious Problem-Solving Styles

Religious problem solving scales appeared once again in the final section of the questionnaire booklet, but preceded by with different instructions. These instructions said, "Below you will find statements that you previously responded to in the first section of this questionnaire . . . This time, however, we do not want you to indicate how strongly you agree or disagree with each. Instead, we want you to indicate how inconsistent or consistent each statement is with your religious beliefs". Participants then evaluated each statement using a 5-point scale that ranged from "this statement is very inconsistent with my religious beliefs" (0) to "this statement is very consistent with my religious beliefs" (4). Between these extremes were "inconsistent" (1), "neither inconsistent nor consist" (2), and "consistent" (3) response options.

### *Procedure*

Research procedures received approval from the Institutional Review Board of the University of Tennessee at Chattanooga. All participants were volunteers, and the data collection process guaranteed the confidentiality of all responding. Administration of the questionnaire booklet occurred in a large classroom setting. Students entered reactions to each questionnaire item on a standardized form that optical scanning equipment later read into a computer data file.

Data analyses first focused on correlations among measures. Again, macro-rationality scores simply quantified the degree to which each scale reflected a religious understanding of each problem-solving style. An examination of mean differences in macro-rationality scores also made it possible to determine which problem-solving style appeared to be most rational within an American ideological surround. Mediation analyses then examined whether macro-rationality scores explained relationships of the three problem-solving styles with other measures.

Finally, micro-rationality analyses rested upon two series of  $\chi^2$  tests. These analyses first assessed the 'religious inconsistency' of a statement by comparing frequencies of the 'very inconsistent' and 'inconsistent' evaluations of an item with frequencies of the other three options. Then procedures examined the 'religious consistency' of an item by comparing frequencies of the 'very consistent' and 'consistent' evaluations with the other options. Again, items determined to be both *not* inconsistent and *not* consistent with religious beliefs were ideologically neutral and ignored in subsequent micro-rationality procedures. Items that were significantly *not* inconsistent and/or significantly consistent were ideologically compatible with American religious beliefs. An opposite pattern of significantly inconsistent and/or significantly *not* consistent responses defined ideologically incompatible items.

Responses to the original, but ideologically inconsistent religious problem-solving items were then rescored in the opposite direction to bring their meaning into conformity with sample religious beliefs. Specifically, scorings of 0-1-2-3-4 with the Likert scale of the original instrument became 4-3-2-1-0 with the religious re-scorings. Procedures then combined the consistent and any rescored inconsistent items into new measures that reflected the religious rationality of the sample rather than the social scientific rationality of the original scale. In multiple regression analyses, original scales and then separately the new micro-rationality measures predicted religious and psychological functioning to compare their validity.

## Results

### *Relationships among Scales*

Correlations among religious problem-solving, religious orientation, and psychological measures appear in Table 1. Collaborative and deferring styles displayed a robust direct relationship and equally strong negative linkages with the self-directing style. The collaborative style also correlated positively with all three religious orientations and broadly predicted relative mental health as made evident in positive connections with integrative self-knowledge and self-esteem and in inverse ties with depression and anxiety. The deferring style displayed similar results except that no relationships appeared with integrative self-knowledge or anxiety. The self-directing style exhibited opposite religious and psychological implications. Specifically, this style correlated negatively with the intrinsic orientation, extrinsic personal orientation, integrative self-knowledge, and self-esteem and positively with depression and anxiety.

With regards to the religious orientations, the intrinsic scale correlated positively with the extrinsic personal and non-significantly with the extrinsic social motivations. Positive associations with integrative self-knowledge and self-esteem and negative ties with depression and anxiety confirmed the intrinsic orientation as psychologically adaptive. The extrinsic personal orientation correlated positively with extrinsic social and self-esteem scores and negatively with depression. The psychological maladjustment of the extrinsic social orientation seemed evident in inverse connections with integrative self-knowledge and self-esteem and in a positive tie with depression.

Previous research has identified the more maladaptive extrinsic social orientation as weakest among these three religious motivations. This pattern appeared once again, Greenhouse-Geisser  $F(1.97, 601.86) = 203.70, p < .001$ . All post-hoc comparisons were statistically significant with the extrinsic social

TABLE 1 Correlations among religious problem-solving, religious orientation, and psychological variables

	2	3	4	5	6	7	8	9	10
Religious Problem Solving									
1 Collaborative Style	-.77***	.71***	.67***	.44***	.13*	.17**	.26***	-.28***	-.17**
2 Self-Directing Style		-.69***	-.25***	-.25***	-.08	-.24***	-.26***	.29***	.23***
3 Deferring Style			.56***	.38***	.21***	-.01	.15*	-.16**	-.11
Religious Orientation									
4 Intrinsic				.24***	-.03	.29***	.28***	-.35***	-.23***
5 Extrinsic-Personal					.15*	.02	.15*	-.13*	.11
6 Extrinsic-Social						-.17**	-.16**	.16**	.02
Psychological Measures									
7 Integrative Self-Knowledge							.51***	-.54***	-.42***
8 Self-Esteem								-.83***	-.37***
9 Depression									.35***
10 Anxiety									

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

orientation lowest,  $M = 1.17 \pm S. E. M. = 0.05$ ; the intrinsic orientation highest,  $2.46 \pm 0.05$ ; and the extrinsic personal orientation in between,  $2.22 \pm 0.06$ .

In findings conforming with their mental health implications, integrative self-knowledge and self-esteem correlated positively with each other and negatively with depression and anxiety. These latter two constructs co-varied directly.

### *Macro-Rationality Differences and Correlations*

Mean differences appeared in macro-rationality scores for the religious problem-solving styles, Greenhouse-Geisser  $F(1.24, 378.33) = 55.68$ ,  $p < .001$ . All post-hoc comparisons were statistically significant,  $p < .001$ . The collaborative macro-rationality was highest,  $2.45 \pm 0.06$ , the self-directing macro-rationality lowest,  $1.49 \pm 0.06$  and the deferring macro-rationality in between,  $1.98 \pm 0.05$ .

As Table 2 makes clear, religious rationality assessments of the collaborative and deferring styles were strongly compatible with each other and equally strong in their incompatibility with the self-directing macro-rationality. Unsurprisingly, macro-rationalities displayed their strongest connection with the specific religious problem-solving style which they assessed. The collaborative macro-rationality correlated positively and the self-directing macro-rationality correlated negatively with the intrinsic and extrinsic personal religious orientations. The deferring macro-rationality exhibited direct connections with all three religious motivations. Psychological implications of each macro-rationality mirrored those observed for the corresponding original scale.

### *Macro-Rationality Mediations*

Procedures next analysed whether macro-rationality scores mediated effects observed for religious problem-solving styles as independent variables in causal models predicting religious and psychological dependent variables. Again, these procedures essentially subtracted out the sample-defined religious rationality of the three problem-solving scales. Results described the meaning of styles when processed through religious rationalities prior to mediation and their meaning without being processed by religious rationalities after mediation. Comparisons between pre- and post-mediation results, therefore, clarified how religious social rationalities affected responding.

In Table 3, the 'indirect' or mediation effects represent the association of an independent variable with a mediator times the association of a mediator with a dependent variable. In other words, indirect effects represent the covariance between problem-solving styles and dependent variables that 'flowed' through or was explained by the religious rationality of the sample. Indirect effects appear for each macro-rationality separately and for all three measures

TABLE 2 *Correlations of macro-rationality assessments with each other and with religious problem-solving style, religious orientation, and psychological variables*

		Collaborative style	Self-Directing style	Deferring style
Macro-Level Rationality Assessment	Collaborative Style		-.79***	.70***
	Self-Directing Style			-.60***
	Deferring Style			
Religious Problem-Solving Style	Collaborative Style	.79***	-.65***	.64***
	Self-Directing Style	-.68***	.80***	-.59***
	Deferring Style	.59***	-.55***	.80***
Religious Orientation	Intrinsic	.64***	-.67***	.54***
	Extrinsic-Personal	.44***	-.24***	.37***
	Extrinsic Social	.05	-.04	.20***
Psychological Variables	Integrative	.22***	-.29***	.03
	Self-Knowledge			
	Self-Esteem	.29***	-.29***	.15*
	Depression	-.30***	.32***	-.12*
	Anxiety	-.17**	.24***	-.06

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

combined in the 'total indirect effect'. Significant mediation effects appear when a bootstrap generated 95% confidence interval based upon 1000 samples does not include zero (Hayes, 2013). The 'total effect' describes the association between the independent and dependent variable without accounting for the influence of mediators, and the 'direct effect' expresses the same relationship after accounting for the mediators. In other words, total effects include the influences of the religious rationalities, and direct effects subtract them out.

Significant mediation results in which the direct effect remained significant after accounting for the mediators identified partial mediation effects. These results revealed that influences other than the religious rationality of these measures contributed to the total effect. With one exception, analyses in which the total but not the direct effect were significant revealed full mediation. In these instances, religious rationalities of the problem-solving styles fully accounted for linkages between the independent and dependent variables. The one exception was the collaborative style relationship with the extrinsic social orientation. This direct effect was non-significantly higher than the total effect.

TABLE 3 Mediation of problem-solving style relationships with religious and psychological functioning by macro-rationality scores for the collaborative (Col-Macro), Self-Directing (SD-Macro), and Deferring (Def-Macro-Def) measures

Independent variables	Dependent variables	Col-Macro indirect	SD-Macro indirect	Def-Macro indirect	Total indirect effect	Direct effect	Total effect
Collaborative	Intrinsic	-.02(-.14, .12)	.22(.13, .32)*	.04(-.02, .10)	.24(.16, .36)*	.32***	.56***
	Ext Personal	.33(.20, .48)*	-.20(-.32, -.10)*	.06(-.02, .14)	.18(.04, .30)*	.23**	.42***
	Ext Social	-.17(-.35, .02)*	-.03(-.13, .09)	.16(.08, .26)*	-.04(-.16, .10)	.15	.11*
	ISK	.06(-.07, .20)	.14(.07, .22)*	-.11(-.18, -.05)*	.09(-.01, .22)	.02	.11**
	Self-Esteem	.10(-.04, .25)	.09(.01, .18)*	-.07(-.15, -.01)*	.12(.00, .25)*	.09	.21***
	Depression	-.10(-.23, .03)	-.11(-.20, -.01)*	.11(.05, .17)*	-.11(-.23, .01)	-.10	-.21***
	Anxiety	.02(-.13, .16)	-.14(-.24, -.06)*	.07(-.01, .15)	-.04(-.17, .07)	-.08	-.12**
Self-Directing	Intrinsic	-.10(-.21, -.01)*	-.04(-.14, .07)	-.03(-.09, .03)	-.17(-.25, -.09)*	-.45***	-.62***
	Ext Personal	-.38(-.51, -.25)*	.26(.10, .43)*	-.07(-.15, .00)	-.20(-.36, -.06)*	-.04	-.24***
	ISK	-.06(-.15, .03)	-.15(-.25, -.04)*	.11(.04, .17)*	-.10(-.20, -.01)*	-.04	-.15***
	Self-Esteem	-.12(-.22, -.03)*	-.07(-.21, .09)	.06(.00, .13)*	-.13(-.26, -.01)*	-.07	-.20***
	Depression	.13(.03, .22)*	.09(-.05, .24)	-.10(-.16, -.04)*	.12(-.00, .24)	.10	.22***
	Anxiety	.01(-.08, .11)	.12(-.01, .24)	-.07(-.15, -.01)*	.06(-.06, .16)	.11	.17***
	Intrinsic	.13(.01, .25)*	.21(.11, .32)*	-.03(-.17, .13)	.30(.15, .44)*	.24***	.54***
Deferring	Ext Personal	.40(.27, .54)*	-.21(-.34, -.10)*	-.05(-.23, .10)	.14(-.04, .28)	.28**	.42***
	Ext Social	-.08(-.22, .05)	-.03(-.14, .08)	.17(.01, .34)*	.06(-.09, .21)	.15	.21***
	Self-Esteem	.13(.03, .24)	.09(-.01, .19)	-.10(-.26, .05)	.11(-.02, .27)	.02	.13*
	Depression	-.13(-.25, -.05)*	-.11(-.19, -.01)*	.20(.07, .34)*	-.04(-.18, .09)	-.10	-.14**
	Intrinsic	.13(.01, .25)*	.21(.11, .32)*	-.03(-.17, .13)	.30(.15, .44)*	.24***	.54***

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ . The 95% confidence interval is in parentheses. 'Total indirect' is the sum of all three mediating effects. 'Direct effect' is the effect of a causal variable on an outcome after accounting for the mediators. 'Total effect' is the effect of a causal variable on an outcome without mediators. Reversal effects appear in shaded boxes. Results are expressed as unstandardized regression coefficients (B).



This pattern occurred because mediators slightly suppressed the total effect, but the greater variability of the direct effect data worked against the observation of a significant suppression result.

#### Collaborative Style Independent Variable

Mediation requires that an independent variable display significant associations with both mediators and dependent variables (Baron & Kenny, 1986). As already made obvious in correlation results, the collaborative style as an independent variable displayed robust ties with all three macro-rationality scores. All three religious rationality measures, therefore, served as simultaneous mediators of collaborative style effects. As the total effect column in the top panel of Table 3 makes clear, the collaborative style exhibited linkages with all seven religious and psychological dependent variables. Again, interpretation of the extrinsic social results was complicated, but Table 3 most basically demonstrates that religious rationalities of the three problem-solving styles fully mediated collaborative style effects on all five psychological dependent variables and partially mediated associations with the intrinsic and extrinsic personal orientations.

Mediation results for the collaborative style also supported four broad conclusions. First and most importantly, mediation effects for the collaborative style were not limited to or even most importantly defined by the religious rationality of the collaborative style itself. Mediation data instead revealed that the religious rationalities of all three styles worked together to explain collaborative style relationships with dependent variables. In other words, religious rationalities operated as construct-general rather than construct-specific influences on responding.

Second, six of seven significant mediation results identified the religious rationality of the self-directing style as the most consistent influence on collaborative style effects. Again, the collaborative style displayed a robust negative linkage with the self-directing macro-rationality. These significant effects, therefore, revealed that the collaborative style most importantly predicted better religious and psychological functioning through its rejection of the rationality of self-direction. In other significant results reflecting a strong compatibility rather than incompatibility with the collaborative style, the deferring macro-rationality displayed four mediation effects with two apparent for the collaborative macro-rationality itself.

Third, a majority of significant indirect results reflected what might be called 'direct mediator effects'. Identification of such effects requires attention to indirect effects *implied* by relationships among measures prior to mediation

procedures. Again, an indirect effect represents the association of the independent variable with the mediator multiplied by the association of a mediator with a dependent variable. For instance, if signs for both associations were negative prior to mediation procedures, then the implied sign of the indirect effect would be positive. Congruence in signs of the *implied* pre-mediation indirect effect with the *actual* post-mediation indirect effect describes a 'direct mediator effect'. In other words, the logic of a mediator influence on a relationship is direct, consistent, or straightforward across the pre- and post-mediation procedures.

This pattern appeared in 7 of 12 significant mediation results. These data indicated that the collaborative style relationship with the extrinsic personal orientation was in part attributable to its own religious rationality. In addition, the positive connection of the collaborative style with the more problematic extrinsic social orientation partly reflected its compatibility with the deferring religious rationality. Again, the ability of the collaborative style to predict higher intrinsic orientation, integrative self-knowledge, and self-esteem scores along with lower depression and anxiety rested upon its incompatibility with the religious rationality of self-direction.

Fourth, 5 of 12 significant results reflected what might be called 'reversed mediator effects'. Reversed effects appeared when the *implied* and *actual* indirect effects were opposite in sign. Such effects implied that the actual relationship of a mediator with a dependent variable was obscured until mediation procedures subtracted out the covariance associated with the independent variable and/or the two other mediators.

Clarification of reversed effects involved the use of a three-step multiple regression procedure. On the first step, the relevant mediator predicted the dependent variable, thereby expressing a positive or a negative unmediated *implied* association. A second step added the independent variable, and a third step then added the two other mediators. A reversal in the sign of the relationship and a significant increase in the variance explained on the second and/or third steps identifies which variables produced a reversed effect in which a positive *implied* association became a negative *actual* association or vice versa. A hypothetical reversed effect for the collaborative macro-rationality mediator could be expressed with the following notational sequence:  $.10/- .32^{***}$ : IV, SDM, DM. In this series, a nonsignificant positive  $.10$  tie of the collaborative macro-rationality (CM) mediator with a dependent variable on the first step became significantly negative  $-.32$  ( $p < .001$ ) after the second and third steps; and this shift in sign reflected influences of the independent variable (IV) on the second step and of both the self-directing (SDM) and deferring (DM)

macro-rationalities on the third step. Other patterns are, of course, possible. No macro-rationalities would be listed, for example, if significant effects appeared on the second but not on the third step.

Table 3 highlights reversed mediator effects in shaded boxes. One reversed collaborative style effect occurred with the extrinsic social orientation. This reversed effect appeared for the collaborative style macro-rationality and occurred through influences of the collaborative style itself supplemented by the deferring macro-rationality mediator (.05/-.26\*: IV, DM). This result indicated that the collaborative micro-rationality was actually incompatible with the extrinsic social orientation and thus suppressed the collaborative style relationship with this religious motivation. This suppression effect combined with the mediation effect displayed by the deferring macro-rationality to help explain the complexity of the slightly higher, though non-significant direct effect in comparison to the significant total effect presented in Table 3. More generally, these data once again identified the extrinsic social orientation as religiously ambiguous (e.g., Watson, Chen, & Ghorbani, 2014).

Another reversed effect appeared in the collaborative style relationship with the extrinsic personal orientation as mediated by the self-directing macro-rationality. This reversal in sign appeared because the rationality of self-direction predicted higher rather than lower extrinsic personal scores after mediation (-.24\*\*\*/.33\*\*\*: IV, CM). In unmediated results, therefore, a collaborative style relationship with the adaptive extrinsic personal orientation occurred because that style and its religious rationality inhibited and indeed transformed the potentially disturbing influences of the self-directing religious rationality.

Finally, three reversed effects appeared for the deferring macro-rationality (see Table 3). After mediation, associations of this mediator became negative with integrative self-knowledge (.03/-.28\*\*\*: IV, SDM) and self-esteem (.15\*/-.14: IV) and positive with depression (-.12\*/.22\*\*): IV, SDM). In each instance, the reversed mediator effect suggested that the religious rationality of the deferring style had negative mental health implications that in unmediated results were obviated by its compatibility with collaborative style and sometimes by its incompatibility with the religious rationality of self-direction.

In summary, mediation results confirmed the collaborative style as an adaptive form of coping that was processed through the religious rationality of all three problem-solving styles. An incompatibility with the religious rationality of self-direction seemed especially important in explaining the benefits of the collaborative style. The collaborative style also seemed important in ameliorating the negative potentials of the deferring rationality.

### Self-Directing Style Independent Variable

Correlations already documented strong associations of the self-directing style with all three macro-rationalities. All three measures, therefore, served as simultaneous mediators of self-directing style effects. As the total effect column in the middle panel of Table 3 makes clear, six of the seven potential dependent variables displayed significant relationships with the self-directing independent variable. Table 3 also makes it clear that religious rationalities fully mediated connections of the self-directing style with the extrinsic personal orientation, integrative self-knowledge, self-esteem, depression, and anxiety and partially mediated its association with the intrinsic orientation.

Mediation results once again supported four main conclusions. First, in parallel with collaborative style results, mediation effects for the self-directing style were not limited to or even most importantly defined by the religious rationality of the self-directing style itself. Construct-general mediation influences once again appeared when all three macro-rationalities combined to explain self-directing style effects.

Second, collaborative and deferring macro-rationalities served as the most consistent mediators of self-directing style effects, with four significant outcomes apparent for each. The self-directing macro-rationality displayed two significant effects.

Third, five out of ten significant results proved to be direct mediator effects. All four effects for the collaborative macro-rationality and one for the self-directing macro-rationality displayed this pattern. In these outcomes, the problematic religious and psychological implications of the self-directing style reflected its own religious rationality and, even more importantly, its incompatibility with the rationality of the collaborative style.

Fourth, the remaining five significant outcomes represented reversed mediator effects. For the self-directing macro-rationality, one reversed effect appeared because the relationship of this mediator with the extrinsic personal orientation became positive rather than negative ( $-.24^{***}/.34^{**}$ : CM). In parallel with a collaborative style effect, the inverse unmediated linkage of self-directing style with the generally adaptive extrinsic personal orientation, therefore, occurred because of its incompatibility with the rationality of the collaborative style.

With the four reversed effects observed for the deferring macro-rationality, associations of this mediator became negative with integrative self-knowledge ( $.03/-.29^{***}$ : IV, SDM) and self-esteem ( $.15^*/-.14$ : IV, CM) and positive with depression ( $-.12^*/.22^{**}$ : IV, CM) and anxiety ( $-.06/.17^*$ : IV). The unmediated non-problematic and even healthy implications of the deferring style rationality,

therefore, became maladjusted once mediation procedures subtracted out its inverse connections with the self-directing style, with those effects sometimes supplemented by its incompatibility with self-directing or compatibility with the collaborative macro-rationalities.

In short, mediation results demonstrated that the problematic implications of the self-directing style reflected construct-general effects of religious rationalities. Incompatibilities with the religious rationality of the collaborative style were especially noteworthy in explaining the religious and psychological disturbances of the self-directing style. Negative mental health implications of the deferring macro-rationality once again appeared after mediation procedures accounted for its incompatibility with the self-directing style and for influences of the simultaneous self-directing and collaborative macro-rationality mediators.

#### Deferring Style Independent Variable

Correlations made it clear that robust linkages appeared between the deferring style and all three macro-rationality mediators. Five of seven potential religious and psychological dependent variables displayed statistically significant relationships with the deferring style independent variable. Table 3 reveals that the three religious rationalities fully mediated deferring style effects with the extrinsic social orientation, self-esteem, and depression and partially mediated associations with the intrinsic and extrinsic personal orientations.

Deferring style data supported the same four general types of conclusions as did data for the two other styles. First, mediation effects for the deferring style were not limited to or even most importantly defined by the religious rationality of the deferring style itself. Again, all three macro-rationalities combined to explain deferring style effects.

Second, the collaborative and self-directing macro-rationalities were the most consistent predictors of deferring style effects, with three significant outcomes apparent for each. Two significant effects appeared for the deferring macro-rationality itself.

Third, six of eight significant results were direct mediator effects. Three of these involved the collaborative macro-rationality and indicated that deferring style connections with stronger intrinsic and extrinsic personal religious motivations and with lower depression rested in part upon the compatibility of this style with the religious rationality of working with God to solve problems. Two direct mediator effects appeared for the self-directing macro-rationality, and both revealed that relationships with a greater intrinsic orientation and lower depression also reflected an incompatibility of this style with the rationality of self-direction. One direct mediator effect appeared for the

deferring macro-rationality. In this instance, the deferring style relationship with the empirically problematic and ambiguous extrinsic social orientation was attributable to the rationality of the deferring style itself.

Fourth, two reversed mediator effects emerged. One occurred because a negative self-directing macro-rationality linkage with the extrinsic personal orientation became positive after mediation ( $-.24^{***}/.35^{***}$ : IV, CM). The deferring style, therefore, also predicted a stronger extrinsic personal orientation before mediation because of an amelioration of the problematic self-directing rationality that was produced by the deferring style itself supplemented by the collaborative religious rationality. The other reversed mediator effect appeared when the deferring style macro-rationality predicted higher rather than lower levels of depression ( $-.12^*/.28^{***}$ : CM, SDM). This mental health benefit of the deferring style, therefore, was attributable to its compatibility with the collaborative rationality and its incompatibility with the rationality of self-direction.

In summary, mediation results for the deferring style most importantly suggested that the religious and psychological advantages of the deferring style were only apparent. A deferring style embrace of collaborative rationality and rejection of the self-directing rationality explained its advantages. Such findings supplemented mediation results for the two other problem-solving styles in unmasking advantages of the deferring style as epiphenomena produced by relationships with the religious rationalities of the other two styles.

### *Micro-Rationality Analyses*

Finally, micro-rationality analyses evaluated the religious meaning of all religious problem-solving items considered individually. Again, these analyses rested upon the use of two sets of  $\chi^2$  tests. Procedures first compared the 'very inconsistent' and 'inconsistent' response frequencies for each item separately with frequencies of the other three response options. Then, the focus shifted to an examination of the 'very consistent' and 'consistent' frequencies in comparison to the other response alternatives. Statements compatible with religious standards would be significantly *not* inconsistent and/or significantly consistent with personal religious beliefs. All Collaborative Style items exhibited this pattern. Specifically, each expression of this style displayed less frequent inconsistency ratings,  $\chi^2(1) \geq 43.47, p < .001$ , with more frequent consistency ratings appearing for 10 of 12 items,  $\chi^2(1) \geq 5.81, p < .05$ .

All 12 Self-Directing items opposed religious commitments. In this pattern of outcomes, statements were significantly inconsistent and/or significantly *not* consistent with personal religious beliefs. Analyses identified 10 of 12 items as inconsistent,  $\chi^2(1) \geq 4.24, p < .05$ , and all 12 items as significantly *not* consistent,  $\chi^2(1) \geq 51.88, p < .001$  with religious commitments.

Three of 12 Deferring Style items conformed to religious beliefs. One said, "In carrying out solutions to my problems, I wait for God to take control and know somehow He'll work it out". Only 105 out of 306 individuals found this assertion to be inconsistent with religious beliefs,  $\chi^2(1) = 30.12, p < .001$ , with the analysis of consistency ratings being nonsignificant,  $\chi^2(1) = 3.78, p > .05$ . A similar pattern appeared for the assertion, "When a situation makes me anxious, I wait for God to take those feelings away". This item was inconsistent with religious beliefs for only 97 participants,  $\chi^2(1) = 40.99, p < .001$ ; and consistency ratings once again proved to be nonsignificant,  $\chi^2(1) = 1.88, p > .05$ . The third item was both *not* inconsistent,  $N = 78, \chi^2(1) = 72.79, p < .001$ , and consistent,  $N = 179, \chi^2(1) = 9.21, p < .01$ , with religious beliefs. This statement said, "When I run into trouble, I simply trust in God knowing that he will show me the possible solutions". The remaining nine deferring items were ideologically neutral because responses to 'other' options were more frequent than both the inconsistent,  $\chi^2(1) \geq 5.37, p < .05$ , and the consistent,  $\chi^2(1) \geq 6.68, p < .05$ , ratings.

Again, micro-rationality analyses made it possible to compare the rationality built into the original scales with scorings that reflected the religious rationalities of the sample. The scoring of collaborative style items did not change because all items were ideologically compatible with religious beliefs. All self-directing items were incompatible with religious beliefs and thus were reverse-scored as a rejection of the self-directing style. Finally, three of 12 deferring style items were ideologically compatible the religious beliefs, resulting in the creation of a much shorter instrument with an internal consistency of .77 that was less than the .91 observed for the original instrument. This three-item measure correlated .74,  $p < .001$ , with the collaborative and .72,  $p < .001$ , with the rejection of self-direction styles. In a finding suggesting the creation of an ideologically purer measure, the average but more variable responding associated with the three-item deferring micro-rationality measure,  $M = 2.14, SD = 1.07$ , was significantly higher than for the original 12-item scale,  $M = 1.76, SD = 0.87$ , Greenhouse-Geisser  $F(1, 305) = 187.39, p < .001$ . The correlation between these two deferring style measures was .90,  $p < .001$ .

Table 4 compares associations of the original and micro-rationality scorings of these instruments with all other measures. No major differences appeared except, of course, that the signs of association for the rejection of self-direction as a religious rationality were opposite to the signs of the religious irrationality as scored by the original self-directing style scale. Though indicating greater validity as measures conforming with the religious ideology of the sample, micro-rationality associations did, nevertheless, tend to be less robust and consistent than data for the original scales. Such outcomes presu-

TABLE 4 Comparative rationality analysis of original and micro-rational re-scorings of religious problem-solving styles

	Original scorings			Micro-relational multiple R			β for micro-rational re-scoring			
	Original multiple R	CS	SDS	DS	CS	RSDS	DS	CS	RSDS	DS
Religious Measures										
Intrinsic	.76***	.22**	-.58***	.00	.77***	.17*	.12	.17*	.54***	.12
Extrinsic-Personal	.49***	.52***	.30***	.21**	.47***	.56***	.13	.56***	.27***	.13
Extrinsic-Social	.23**	.06	.15	.27**	.17*	.10	.17	.10	-.12	.17
Psychological Measures										
Integrative Self-Knowledge	.34***	.14	-.38***	-.37***	.29***	.10	-.27***	.10	.35***	-.27***
Self-Esteem	.29***	.21*	-.19*	-.13	.27***	.15	-.01	.15	.15	-.01
Depression	.32***	-.19*	.24*	.14	.30***	-.12	-.03	-.12	-.18	-.03
Anxiety	.24	-.03	.28**	.10	.24***	-.03	.10	-.03	-.28**	.10

Note: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ . Original scorings include the Collaborative Style (CS), Self-Directing Style (SDS), and Deferring Style (DS), and micro-rational re-scorings include the Collaborative Style (CS), Rejection of Self-Directing Style (RSDS), and the Deferring Style (DS).



ably reflected the less internally consistent and more variable responding associated with the shorter 3-item deferring micro-rationality measure.

Comparison of multiple regression results for the original scales in Table 4 with correlations in Table 1 yielded three noteworthy clarifications. First, the inverse correlation of the collaborative style with anxiety became nonsignificant in the multiple regression. This correlation, therefore, apparently reflected the inverse connection of the collaborative style with the anxiety-inducing influences of the self-directing style.

Second, the self-directing style co-varied inversely with the extrinsic personal orientation in a correlation but directly in the multiple regression. This result supplemented the macro-rationality mediation data in identifying complexities in the covariance among problem-solving styles as a critical influence on self-directing style relationships with the extrinsic personal orientation.

Third, the deferring style displayed correlations that were positive with the intrinsic orientation, non-significant with integrative self-knowledge, positive with self-esteem, and negative with depression. In multiple regressions, however, these associations became zero, negative, non-significantly negative, and non-significantly positive, respectively. As with macro-rationality mediation results, therefore, these contrasts once again suggested that the seemingly adaptive implications of the deferring style instead reflected its covariance with the other two religious problem-solving styles.

## Discussion

Comparative rationality analysis in the United States described religious problem-solving styles in terms broadly similar, though not identical to those discovered in Iran (Ghorbani et al., 2012). Collaborative style items were wholly consistent with religious beliefs in micro-rationality analyses, and the collaborative style and macro-rationality scores predicted religious and psychological adjustment. All self-directing style items were instead inconsistent with sample religious beliefs, and the self-directing style and macro-rationality scores displayed linkages with religious and psychological maladjustment. These results paralleled data obtained in Iran. In procedures not used in Iran, mediation analyses also confirmed the religious rationality of the collaborative style as clearly adaptive in its religious and psychological implications with the rationality of self-direction being clearly maladaptive.

As in Iran, the deferring style was ambiguous, but not exactly in the same way. In micro-rationality assessments, no items were inconsistent with religious commitments in contrast to Iran where five items were. Nine of 12 de-

ferring style items proved to be ideologically irrelevant to American religious beliefs. In Iran, this number had been only four. As in Iran, three deferring style items conformed with religious commitments. Correlations for the deferring style and its macro-rationality revealed at least some linkages with religious and psychological adjustment. Mediation and multiple regression analyses, nevertheless, suggested that such findings were epiphenomena of relationships with the other problem-solving styles and the three religious rationalities. Procedures that controlled for these relationships identified the deferring style as largely problematic in its religious and psychological implications.

Evidence that the collaborative style most strongly conformed with American religious beliefs appeared when its mean macro-rationality was significantly higher than means for the two other styles. Among macro-rationality scores, the self-directing mean was lowest, further documenting its relative incompatibility with American religious commitments. Self-direction, therefore, did not seem more compatible with the presumably more individualist cultural context of America than of Iran. Moreover, self-directing style data questioned this form of coping as even 'religious'. Again, underlying the creation of this measure was the assumption that "God is viewed as giving people the freedom and resources to direct their own lives" (Pargament et al. 1988, p. 91). Inverse relationships of this scale and its macro-rationality with the intrinsic and extrinsic personal religious orientations implied no commitment to and indeed the possible rejection of any positive vision of a God who encourages human freedom. Connections with psychological maladjustment also offered little confidence that this style reflected 'resources' rather than liabilities. With regards to the deferring macro-rationality mean, its intermediate location between means for the two other macro-rationalities further suggested its ambiguous positioning between collaborative adjustment and self-directing maladjustment. This rationality of deferring to God also had noteworthy connections the empirically problematic extrinsic social religious motivation.

### *Limitations*

As with any investigation, procedural limitations mean that caution is necessary in evaluating final conclusions. Two limitations may deserve special attention. First, results of this investigation reflected the religious pluralism of an especially religious southeastern region of the United States. Differences might appear in the analysis of other areas of the country or in an examination of an American sample that displayed more consistent ideological commitments. The deferring style, for example, might display different results in a sample of Americans who maintained uniformly strong conservative or fundamentalist Christian beliefs.

Second, all conclusions rested upon correlational data. This was true even in mediation procedures that tested causal models about relationships of the religious problem-solving style independent variables with religious and psychological dependent variables. All findings, therefore, require tentative interpretation because correlation cannot establish causation.

### Conclusions

This investigation further supported the ISM argument that religious social rationalities exert important influences on social scientific data. A previous study supported that claim by using comparative rationality analysis to identify the collaborative problem-solving style as consistent, the self-directing style as inconsistent, and the deferring style as ambiguous relative to Iranian Muslim religious commitments (Ghorbani et al., 2012). The same broad pattern appeared in the present, largely Christian American sample. In both societies, data supported the ISM claim that responses to social scientifically constructed instruments are processed systematically through the social rationalities of research participants.

Especially revealing were procedures that used macro-rationality scores as mediators of relationships between religious problem-solving style independent variables and religious and psychological dependent variables. These analyses demonstrated that correlation results did not reflect simple construct-specific mediation effects. In other words, collaborative style effects were not explained only or even most importantly by the religious rationality of the collaborative style itself; and the same was true for the two other styles as well. Religious rationalities functioned as a complex dynamic involving construct-general influences of all three styles and their macro-rationalities working together. Correlations essentially operated as an empirical screen upon which those complex dynamics projected their effects.

This study focused on basic social scientific questions related to the psychology of religious coping, but applied implications may be apparent as well. In therapy, clients may express self-directing styles of religious problem-solving that help explain their maladjustment. The present data suggest that successful therapy might work by transforming self-direction into collaboration with a loving and supportive God as the ultimate standard. At least theoretically, the self-directing style may also point toward a supportive but non-intervening deistic God who encourages adjustment within a more humanistic ideological surround (Phillips et al., 2004). Here, successful therapy might seek to develop more beneficial visions of a deistic God as the ultimate standard. Finally, some perspectives may assume that optimal mental health simply requires atheism

(e.g., Freud, 1927/1961). Within this ideological surround, successful therapy might require elimination of God as in any way acceptable as an ultimate standard.

In short, alternative therapeutic approaches can operate as conflicts between incommensurable rationalities that cannot be resolved through a brute empiricism that can somehow rise 'objectively' above ideology. This is so because the absence of a 'more ultimate' standard for evaluating ultimate standard means that no metric exists for constructing an 'objective' social scientific falsification of any ultimate standard. Empiricism will, nevertheless, be useful in defining what is and is not possible within different ideological surrounds, and that information will also be important in developing derivative inferences useful in the construction of dialogical spaces between conflicting therapeutic rationalities.

Finally, the present and a previous companion project brought the incommensurable social rationalities of Muslim Iran, mostly Christian America, and the social sciences into dialogue. Procedures implicitly acknowledged postmodern relativism as a reality, but that acknowledgement in no way produced a confusing swirl of subjectivities that lacked the guidance of a common metric of evaluation. Empirical methods, instead, made it possible to offer reliable and valid assessments of the postmodern relativism that exists in the derivative inferences of incommensurable ultimate standards. Comparative rationality analysis along with other procedures and assumptions of the ISM, therefore, illustrate the potentials of a post-postmodern 'objectivity' to promote better understanding within pluralistic cultural contexts in which exclusive commitments to different ultimate standards remain influential (Watson, 2011; Ghorbani et al., 2012).

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