

# Faith: Serving Emotional Epistemic-Goals Rather than Evidence-Coherence

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## Abstract

Emotional epistemic goals are an alternative to evidence-coherence, whereby beliefs are held for their aid in achieving some desired subjective goal, independent of the beliefs' veracity. Some prior research has presumed that deference to "faith" constitutes an emotional goal. However, the epistemic nature of faith and its relation to evidence has been the focus of philosophical debate, both historically and recently. The present study examines how believers construe the epistemology of faith, by examining the covariance between faith-based, emotion-based, and evidence-based reasons that believers endorse for their specific beliefs across a number of topics. Results support the view of faith as a form of emotional preference.

**Keywords:** Epistemology; Rationality; Scientific-Reasoning; Beliefs; Emotion; Religion; Faith.

## Introduction

Previous cognitive science models of belief formation, revision, and conceptual change have presumed that these processes operate according to the principle of explanatory-coherence with available knowledge and evidence (e.g., Chi, 1992; Thagard, 1992). Presumably believers employ this principle in service of the goal of increasing the veracity and probable accuracy of their beliefs. Evidence-coherence is the basic principle of empiricism that underpins the philosophical justification for scientific inquiry. Thus, this model of belief represents a normative prescription of epistemic rationality. When the prescriptive epistemic goals are presumed to be descriptive, then deviations from the model would reasonably be presumed to result from constraints in the basic cognitive mechanisms responsible for computing the normative response.

However, these rational models of belief formation are psychologically implausible, because they do not allow a role for emotional bias to impact belief, independent of evidence and explanatory coherence. Research has demonstrated people often form beliefs based on emotional goals that are orthogonal to these normative, rationalistic goals related to evidence, explanatory-coherence, and belief-veracity (Griffin, 2007; Griffin & Ohlsson, 2001). Beliefs can be formed because the act of believing helps achieve a desired emotional state, regardless of whether the belief accurately corresponds to an external reality. Griffin and Ohlsson (2001) argued that this observed variability in epistemic goals highlights the distinct and potentially disconnected sub-processes of knowledge-acquisition and belief-revision commonly subsumed and undifferentiated within the construct of conceptual change.

For the present purposes, emotional goals are defined in fairly broad terms, namely anything that motivates belief or disbelief in a claim that is independent of factors (e.g., evidence) that logically relate to the claim's probable accuracy. The most direct example would be that the conceptual content of the claim or its logical implications evoke positive or negative emotion, such as when a person disbelieves evolution because they find its implication that humans are just a species of animal unpleasant. However, the belief-emotion relation can be more indirect such as when a person models and mimics the outward emotional expressions of others which leads the person to experience the emotions themselves (e.g., Hatfield, Cacioppo, & Rapson, 1994). Even more indirectly, people can experience emotion as a result of the social rewards and punishments reaped when sharing or violating the beliefs of others. This admittedly broad construct of emotional goals serves the present purpose of identifying a set of goals that is orthogonal to (and perhaps often in opposition to) the goals of belief veracity and coherence with evidence.

## Related Work

This belief-biasing role of emotional goals should not be confused with the more commonly discussed role of emotion as a mere contextual feature that functions as a distraction or priming effect and impacts the computational or algorithmic processes which serve normative accuracy goals (see, LeBoeuf & Shafir, 2005). Within that framework, emotion is just another factor that constrains computational mechanisms. The present focus differs in that it presumes that the computational processes may be operating at full strength, but that the goal towards which they are directed is not the one presumed as a fundamental starting point in normative models of cognition. To clarify with an analogy, if a baseball batter hits the ball softly into the infield, this might be due to a distraction in the stands leading to improper execution of his batting skills towards his goal of a home-run. However, this outcome might be due to the fact that his intention was actually to bunt rather than hit a home run, and he executed his skills perfectly towards this goal.

Thagard (2006) has recently made important revisions to his purely rationalistic models of belief formation by incorporating emotional preferences. Thagard's revised model presumes that competing hypotheses have both explanatory and emotional coherence and rather than compete these two factors additively combine to determine belief. My current and previous work (e.g., Griffin, 2003 & 2007; Griffin & Ohlsson, 2001) shares the emphasis upon emotional preferences, but differs in presuming that emotional and evidential concerns can more directly

compete for influence. When something other than explanatory coherence and belief veracity are the epistemic goal, it is questionable whether explanatory coherence is even computed, let alone plays a role in determining belief. This difference between the current and Thagard's perspective leads to different expectations about epistemic nature of faith discussed in the next section.

Thagard's non-competitive perspective borrows heavily from the motivated reasoning literature exemplified by Kunda (1990). Kunda argued that although emotions influence beliefs, people have a "desire to be rational" and "maintain an illusion of objectivity" by only forming emotionally preferred beliefs when "they can muster up ... evidence" and by the fact that they "do not realize that the process is biased by their goals." (pp. 484-485).

Kunda's review of the social psychology literature has clearer implications for the formation of subjective attitudes about objects (e.g., I like dogs) than for the formation of beliefs about the truth value assigned to propositions (e.g., Dogs kill cats). Only a few of the studies actually assessed beliefs rather than attitudes. Even these few studies suffered from various generalizability and validity limitations, due to methods such as assessing beliefs about highly valenced personal attributes, or inferring directionally motivated belief from data that could be accounted for by use of prior knowledge and explanatory coherence. These limited implications about belief formation is unsurprising given social psychology's focus upon attitudes rather than beliefs. The two-volume *Handbook of Social Psychology* (Lindzey & Aronson, 1985) makes reference to beliefs on less than 1% of its pages compared to at least 12% for attitudes. The attitude/belief distinction is critical since, unlike beliefs, emotional valence is inherent to attitudes, because they are "evaluative in nature—organized around the basic categories of 'good' and 'bad'" (see Giner-Sorolla, 1999, p. 442).

There is another body of research (e.g., Stanovich and West, 1999), that shares the present focus upon epistemic goals and their independence from algorithmic or computational constraints in producing deviations from normative models of rationality. Stanovich & West (e.g., 1999) review a number of studies from their labs showing that normative rationality in reasoning, judgments, and decision-making is constrained by intention-level dispositions regarding one's willingness to engage in *actively open-minded thinking* (AOT). People's AOT dispositions account for variance in normative reasoning and judgments that cannot be accounted for by typically emphasized factors related to cognitive ability, educational achievement, or prior-knowledge.

This existing work on AOT provides a useful starting point for thinking about epistemic goals, but its implications are not entirely clear with regard to the specific issue of forming beliefs based upon coherence with available evidence versus with emotional preferences. The AOT research has not examined belief formation itself, but rather how existing beliefs and attitudes impact reasoning and

judgments about new information. In addition, the AOT construct and accompanying measurement scale are broad and composed of multiple sub-components, only one of which directly relates to responsiveness to evidence, and none that directly tap emotional epistemic goals. Also, the AOT construct refers to de-contextualized, domain-general thinking dispositions rather than epistemic goals related to particular issues and hypotheses. This is particularly important, since the emotional preferences and goals that could determine belief formation are likely to be domain, topic, or even proposition specific.

### **Faith as Emotional Preference**

Unlike the domain-general measures of AOT, Griffin (2007) asked believers about the actual epistemological basis for their specific beliefs across an array of domains. After reporting their belief or disbelief in several propositions, people endorsed closed-ended items about goals related to evidential-coherence and to emotional-based preferences, such as relying upon the heart and not the head, relying on faith, and believing an idea because it is emotionally comforting. The validity of using this closed-ended self-report measure was assessed by a prior study (Griffin & Ohlsson, 2001) that showed convergence between this measure and people's open-ended self-generated reasons for belief, their reported willingness to revise their beliefs in light of new evidence, and their acceptance of familiar scientific ideas with strong evidential support (e.g., evolution).

However, this prior work has simply assumed that people's endorsement of faith reflects emotional rather than evidential goals. This idea of faith as orthogonal to evidence is represented in typical dictionary definitions of faith as "unquestioning belief that does not require proof or evidence" (Webster's New World Dictionary, 1982). Advocates of critical thinking and scientific reasoning often contrast these thinking skills against religious faith which they define as "blind trust, in the absence of evidence" (Dawkins, 2007, p. 198). Explicitly equating faith with emotional preference is less common, however it is difficult to imagine what underlying motives for holding a belief exist outside of either being convinced on evidence that it actually is true or having the emotional preference to want it to be true.

However, this view of faith does have its critics among modern theologians. Oxford Theologian, McGrath, calls Dawkins' definition of faith "ludicrous", "highly implausible", "not what Christians think", and McGrath doubts that there are any "theologian[s] who take [this definition] seriously" (McGrath, 2005, pp. 122-123). McGrath asserts that a definition which captures how the faithful themselves construe faith was offered by Griffith-Thomas (1930, p. xviii), who stated that faith "commences with the conviction of the mind based on adequate evidence"

Despite such objections, faith as divorced from evidence is a definition that is quite in-line with the common

dictionary definitions already cited, which are likely rooted in long-standing philosophical traditions, such as the Fideism of Pascal, Kierkegaard, James and Wittgenstein (see Amesbury, 2007). Also, the founder of Christian Protestantism, Martin Luther, revealed a similar conception of faith when he reacted against the evidence-based reasoning of the Enlightenment by proclaiming that “reason is the greatest enemy that faith has.” (1569, p. 353). At minimum, McGrath appears to overstate his case against Dawkins, but he is not alone in his objection to the concept of faith as divorced from evidence.

Thagard’s (2006, p. 224) recent model of emotional cognition argues for a mixed view of religious faith as “a combination evidential and emotional reasons that satisfy both cognitive and emotional constraints”. His central example is that belief in God is preferred over non-theistic naturalism because it satisfies more emotional preferences, but also because it can explain the same facts as naturalism (e.g., existence of consciousness and apparent design). This makes the prediction that many people would abandon theism if its explanatory coherence were reduced by the introduction of new facts or new alternative explanatory hypotheses. This prediction seems at odds with highly publicized Gallup polls showing no change in levels of theism after a century of new knowledge and highly explanatory hypotheses (e.g., evolution) that pose a serious challenge to theism’s explanatory coherence. The seeming explanatory aspects of faith that Thagard refers to may be post-hoc efforts to protect the belief from critique rather than something that actually played a determining role in adopting the belief.

Regardless of how theologians, apologists, and philosophers attempt to define, defend, and justify faith against normative intellectual standards, this would not inform us as to the psychology of faith as it is actually employed by people in forming their personal beliefs. Do the faithful see faith as a form of evidence and determined by its ability to explain evidence? Do the faithful employ the idea of faith to refer to their deference to emotional preferences rather than an intellectual, reasoned evaluation of an idea’s plausibility?

The study presented here provides data that speaks to this issue of the actual epistemic nature of faith as employed by those who ground their beliefs in faith. These data also speak to whether faith on religious topics is psychologically distinct from faith on non-religious topics. In overview, people were asked about their beliefs and the epistemic nature of these beliefs across a diverse set of domains. They rated faith, plus emotional and evidential reasons as the basis for their various beliefs. Observed relations between faith ratings and the other types of epistemic goals were used to infer whether those who employ faith view it more as a form of evidence or as serving emotional-goals.

## Methods

### Participants

The survey was completed by 661 UIC undergraduates as part of a course requirement. Thirty-two (4.8%) participants had missing data. Of the remaining 629, 90% identified as Christian, Catholic, Muslim, Hindu, or Jewish.

### Materials and Procedure

Using a 1(strongly disbelieve) to 9(strongly believe) scale, participants reported their belief in 8 propositional assertions within the domains of Evolution, Biblical Creationism, Afterlife, UFOs, ESP, Parenting, Romantic Attraction, and Race-differences in IQ. The topics and claims were chosen to represent a diverse set of largely unrelated beliefs across several domains that varied in their direct relevance to religion. Evolution, Creationism, and Afterlife have obvious connections to strongly held and presumably faith-based religious beliefs, while the other topics are less directly related to religion. Thus, the results could support conclusions about the general epistemology of faith and whether religious faith appears to be qualitatively distinct from faith in non-religious domains.

Participants were then provided with 5 “potential reasons why someone might hold any particular belief”. Respondents used a 1(not at all my reason) to 9(completely my reason) scale to rate each reason in terms of whether “that particular reason is why you personally hold your opinion on this particular topic”. Participants rated the 5 reasons separately for each of the 8 topics. The provided reasons were designed to represent faith, emotional-goals, or evidential-goals (see Table 1). Participants were not informed of these categories.

Table 1. Endorsed Reasons for Belief/Disbelief

Label	Reason for belief/disbelief
Faith	“I have faith that my opinion is true.”
Comfort*	“My opinion makes me feel good and is comforting.”
Heart*	“I trust my heart not my head on this topic.”
Evidence	“I considered the evidence that I’m personally aware of.”
Science	“My opinion is supported by science.”

\* Emotional reason

It is important to note that while the last item refers specifically to “Science”, the item labeled “Evidence” provides no constraints on how respondents interpret the meaning of “evidence” and the phrase “that I am personally aware of” was included to encourage respondents to include anything they would consider a type of “evidence”. Pilot testing revealed that the Evidence and Science items are only correlated at  $r = .50$ , meaning that 75% of the variance in Evidence ratings is independent from the Science item.

## Results

### Beliefs

Figure 1 displays the percentage of respondents who disbelieved (1-3 rating), believed (7-9 rating), or had no opinion (4-6 rating) on each of the 8 topics. For all the topics, only a small minority of the sample (5% to 17%) lacked a belief (one way or the other). For the purposes of this paper, *disbelief* is regarded as a type of belief since both imply the assignment of some truth-value to a proposition. Except where disbelief is explicitly signified, the term belief will be used to refer to both.

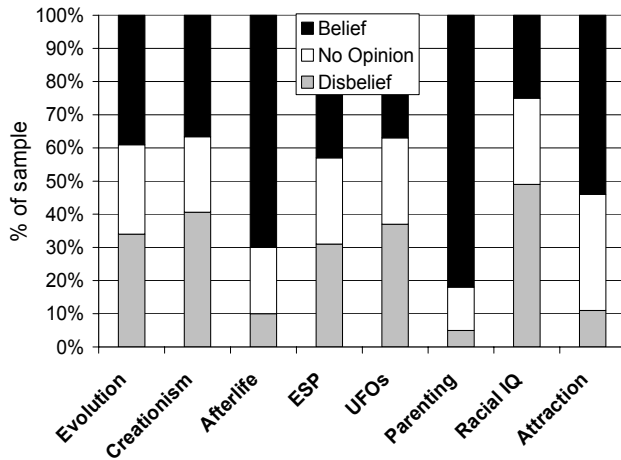


Figure 1. Percentage of Disbelief, Belief, and No Opinion

Notably, 37% of respondents believed in Biblical Creationism, while only 39% believed the scientific theory of Evolution. This latter result is similar to results of Gallup polls of U.S. residents. Combined with the 90% identification with a major traditional religion, these data suggest that this sample contained many people who are committed to a religious faith and are similar in religiosity to the U.S. population.

To verify that beliefs among the 8 topics were relatively independent, belief strength on each topic was correlated (Pearson) with belief on all other topics. Degree of belief in Evolution and Creationism were strongly and negatively related ( $r = -.70$ ). However, all of the other 27 bi-variate relationships among the 8 beliefs were weak or non-existent, and the median absolute-value of these 27 coefficients was  $r = .07$ . The absolute values were used, so that the median would reflect the typical strength of relationship, avoiding the possibility of strong positive and negative relationships canceling out.

### Epistemic Reasons for Belief

Table 2 displays the mean ratings for each type of reason for belief, averaged across topics, then across participants. The average rating for all items was near the midpoint of the scale (5.00 = “moderately my reason”), but the Standard

Deviations were around 2.00 which shows that all items received both high and low ratings by a number of respondents. Evidence was rated slightly higher than other items, but Faith was rated second highest, and Science was rated lowest. These data suggest that respondents felt comfortable endorsing faith and emotion items, despite the University context. Also, the fact that largest difference was between the Evidence and Science items converges with their modest correlation from pilot data in suggesting that respondents construed “evidence” in their own terms that went beyond their conception of formal, scientific evidence.

Table 2. Mean Ratings for each Type of Reason for Belief.

Item	Mean Rating	SD
Faith	4.25	1.82
Comfort	4.01	2.01
Heart	4.17	1.85
Evidence	4.96	1.71
Science	4.00	1.68

Table 3 displays the Pearson correlations between ratings of Faith and ratings of the other 4 reasons for belief in each of the 8 topics. Response biases towards generally using the high-end or low-end of the rating scale could inflate or mask the true relationships among these items. Thus, each participant’s average rating across all 40 items (5 reasons X 8 topics) was used a response-bias measure. Table 2 reflects the partial correlations after controlling for response-bias.

Table 3. Correlations between Faith, Emotion, and Evidence

Faith by Topic	Comfort	Heart	Evidence	Science
Evolution	.25*	.44*	-.17*	-.31*
Creationism	.33*	.29*	-.23*	-.32*
Afterlife	.48*	.42*	-.08**	-.20*
ESP	.32*	.22*	-.13*	-.15*
UFOs	.33*	.28*	-.12*	-.23*
Parenting	.35*	.21*	-.02	-.18*
Racial IQ	.28*	.28*	.01	-.07**
Attraction	.47*	.37*	.06	.05
Average	.33	.31	-.09	-.18

\*  $p < .05$ ; \*\* $p < .10$ .

The pattern of results were nearly identical for all 8 topics. Reliance upon Faith was always positively and significantly related to the affect-based reasons of Comfort and Heart. In contrast, Faith was either unrelated to or often negatively related to considering Evidence, and even more negatively related to considering support from Science.

Controlling for potential response bias that would produce positive associations among items is important for revealing relationships that are actually negative. However, this approach may reflect an overly conservative under-estimation of true positive relationships. Thus, it is worth noting that when response bias is not controlled for the

average correlation between Faith and Comfort (bottom of column 2 in Table 3) increased from .33 to .56.

The results in Table 3 suggest that faith reflects an underlying factor defined by an emotional bias towards accepting or rejecting ideas without considering relevant and available evidence. To further test this idea, the 5 reasons for belief were entered into a Principal Components Analysis using varimax rotation (results were similar with other rotation methods). This procedure was repeated for all 8 topics. Once again, the results were nearly identical for all 8 topics. The same two orthogonal factors always emerged, accounting for 70-78% of the total variance. The two emotion items (Comfort and Heart) loaded together with Faith on the first factor. The evidence and science items loaded on the second factor. Loading values ranged from .74 to .92, and faith was always the highest loading item on the emotion factor. Table 4 shows the means and ranges for the factor loadings of each item, collapsed across the 8 topics.

Table 4. Factor Loadings for Each Reason for Belief.

Item	Factor 1 Loadings		Factor 2 Loadings	
	Mean	Range	Mean	Range
Faith	.85	.82 - .87	.06	-.04 - .22
Comfort	.80	.74 - .84	.13	.05 - .25
Heart	.82	.74 - .87	.01	-.15 - .11
Science	.00	-.12 - .19	.90	.85 - .92
Evidence	.14	.08 - .18	.88	.85 - .92

It is possible that people who rely upon faith construe it differently than those who do not rely upon it. To test this, the sample was dichotomized based upon the median rating (4.13) for the faith item, averaged across topics. Separate factor analyses yielded nearly identical for those who gave faith high ratings and those who gave faith low ratings.

### What Kind of Faith?

The consistency of the results across all topics already suggests a lack of qualitatively different types of faith. If religious and non-religious faith were different, we would expect to see relatively weak correlations between faith ratings on the religious topics and the non-religious topics. Pearson correlations for the faith item for each topic was significantly ( $p < .05$ ) and positively correlated with faith ratings for all 7 other topics (mean  $r = .44$ ; range .32 - .67). Furthermore, this average correlation among faith ratings was equally strong between the non-religious and religious domains (Creationism, Evolution, and Afterlife) as it was between the topics within either domain.

Perhaps believers' faith ratings even on the religious topics did not reflect a religious type of faith. This seems implausible, but if true then we would not expect these faith ratings to predict common religious positions on these topics. However, Pearson correlations showed that faith ratings were significantly and positively correlated with the common (but not universal) religious positions of belief in Biblical Creation and an Afterlife, and disbelief in Evolution

( $r_s = .45, .38, -.38$ , respectively). Note that since these positions are only adopted by some religious adherents, the modest magnitude of these correlations is expected.

## Discussion

The present results suggest that people generally construe the epistemology of faith as akin to believing something that serves an emotional goal, independent of considering evidence. Whether the available evidence is formal scientific evidence or broadly construed evidence personally known to the believer does not seem to matter. Also, the Believers do not appear to associate faith with evidence. They do however, associate faith with believing an idea because it is comforting or coheres with the emotional desires of the "heart" rather than the reasoning of the "head". Both those people who claim to rely upon faith and those who do not share this conception of faith as emotion. In addition, these results fail to support any meaningful psychological distinction between the epistemology of religious versus non-religious faith. The distinction may be arbitrarily based in whether a belief happens to have been formally encompassed within a known religious tradition.

If faith represents a belief that is independent of evidence, then why did faith show modest negative correlations with the two evidential reasons? This can be understood by assuming that believers only require one epistemic basis for their belief. If their goal can be achieved via faith, then evidence is superfluous. So, people relying on faith are less likely to consider it than people not using faith, resulting in a negative correlation. Conversely, if they already achieved a position via considering the evidence, then what need is there for faith. In addition, many beliefs (e.g., creationism) will happen to be directly contradicted by a great deal of readily available evidence, so achieving emotional goals will require active ignoring of evidence. Thus, while faith epistemology does not logically necessitate the ignoring of evidence, the actual implementation of faith-based epistemology will lead to a reduction in degree and quality of evidence-based reasoning.

The results support a view of faith as a form of emotionally biased wishful-thinking rather than as evidence of things unseen or some mixed view. Thagard's (2006) view that emotional and explanatory coherence additively combine may be a plausible account of belief in many circumstances. However, on these current issues people generally displayed the more "wishful-thinking", emotion-centric faith that Thagard (2006, p. 242) ascribes to William James (1958), but rejects for not being "psychologically plausible". In addition, peoples' willingness to report relying upon emotion over evidence contradicts Kunda's (1990) assumption that people will only believe what they prefer, if they can maintain an appearance of rationally evaluating the evidence. It may seem ironic that publicly vocal critics of faith-based belief, such as Richard Dawkins (2007), appear to have a better sense of how the faithful generally construe and employ faith than do the academic theologians and apologists (e.g., McGrath, 2005) who seek

to defend faith against such critics. However, academic theologians and other religious public intellectuals may be unique in their motive to defend faith against academic standards of inquiry.

A possible point of contention about the current study is how respondents understood “considering the evidence I’m personally aware of”. However, the strength of this wording lies in the fact that its ambiguity allowed each respondent to interpret the meaning of “evidence” for themselves. The data show that they did not interpret evidence simply as synonymous with formal science. If respondents had any inclination to construe their faith as a form of evidence, they were free to do so and to endorse both faith and evidence, yielding a positive relationship. The modest negative relationship that was actually observed would likely have been even stronger had a more constrained, philosophically viable definition of evidence been provided to respondents. More generally, the consistent and predictable pattern of relationships among the items further supports the validity of this self-report measure.

The results lend further support to claims (e.g., Griffin, 2007; Kunda, 1990; Stanovich & West, 1999; Thagard, 2006) that believers often fail to operate solely under the epistemic goal of explanatory-coherence that is central to traditional cognitive models and normative models of rationality. The present data also go beyond other assessments of domain-general commitment to normative goals, by assessing belief-specific goals and commitment to alternative goals that can be broadly construed as serving emotional preferences. By directly showing that believers are often committed to emotional goals that have no logical relation to the plausible accuracy of the beliefs, these data suggest that believers may fail to be driven by (or even constrained by) a principle of evidence-coherence, because these emotional concerns override any goal of belief veracity.

The present findings support the validity of construing the epistemology of faith as a type of emotional preference or motivation to reach certain conclusions, independent of evidence. This could suggest that believers are also often not sincerely concerned with belief veracity and accuracy. More generally, the findings show that people often hold epistemic goals that are orthogonal or even at odds with normative goals of accuracy or rationality as commonly construed. One such class of non-normative goals is to achieve desired emotional states. It is important to note that beliefs can be related to emotion without being based in emotional preference. Emotional desire to accurately answer a question can fuel a search for explanatory coherence. Also, forming a belief that achieves high explanatory coherence could evoke positive emotion. The threat to normative rationality arises when emotional preferences about particular hypotheses play a determining role in acceptance or rejection of those hypotheses. Within certain contexts, these emotional epistemic goals could be quite dominant and models of human cognition would do well to give more consideration to this type of emotional influence.

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