

How Does Anyone Change Belief about Anything?

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Abstract. The question of coming to faith, and leaving Christian faith, has become prominent in recent years, with much discussion of Christian “conversion” and “de-conversion.” Some people seem to make sudden changes in their belief systems; are such changes fundamentally irrational, or can we understand them as the outcome of a rational (though perhaps tacit) thought process? In this paper, I present a model for how people change their minds about both minor and major beliefs, with elements from Thomas Kuhn’s model of “revolutions,” as well as input from the modern philosophy, psychology, and Christian theology. The main thesis of this paper is that people regularly go through revolutions of varying degrees of magnitude, which can be quite sudden, based on the buildup of tension due to lack of felt coherence in a previously-held view, compared to their perception of alternative views. Such a process is rational at its core.

Keywords: Epistemology, Thomas Kuhn, Conversion, Presuppositionalism.

Introduction

At a recent meeting of Christians in science, the advertised theme was “Does anyone come to faith by a rational process?” I encountered two types of reaction to this title. Some people asked, “How can that even be a question? Why would anyone believe something they didn’t think

was true?” Other people reacted just the opposite way: “Of course nobody comes to faith by a rational process. Faith is the opposite of reason!”

Many books have been written on epistemology, focusing on how we can justify to ourselves that we know something. In this paper, I address a related but different problem, namely how we change our minds to believe different things, addressed much less in the literature.¹ People change their beliefs about many things, ranging from the mundane (“I don’t think that Jane likes me”) to deeply held religious beliefs. People “convert” to Christianity from other religions or from irreligion, and avowed Christians “de-convert” and reject beliefs they once claimed to hold. Often these changes seem to come in a sudden jump, or leap, to a new viewpoint, which can make others think they have happened irrationally. I argue here that even the most sudden of these leaps can be quite rational, although people do not always think rationally.

The fundamental problem, recognized by many authors, including Kierkegaard, Cornelius van Til, Michael Polanyi, and Thomas Kuhn (see, e.g., Kierkegaard 1959, Zuidema 1960, van Til 1955, Polanyi 1966, and Kuhn 1962), is that all people have mental filters through which they see the world. New experiences and new ideas in many cases simply do not register or make sense; in what is often called “confirmation bias,” one generally sees what one expects. This process of filtering is actually a valuable part of the learning process. For example, small children and others hearing a new language first just hear a babble, and must learn to identify what parts to pay attention to. This process of focusing on important parts simultaneously means filtering out unimportant parts. In the same way, someone learning to drive a car for the first time can be overwhelmed by all the signals from the car dashboard and the rapidly changing view through the windshield, but after some time, most people learn to filter out most of it and react only to certain key elements, driving without thinking consciously about it, no more than they would think about how to walk. But this general learning process also narrows our conscious experience. A person who doesn’t care about sports will see a sports program

¹ Alasdair MacIntyre has addressed this issue, focusing on the importance of “narrative,” that is, the story of change in epistemology. See, e.g., MacIntyre 1977.

on television as merely a random mix of activity; a person who doesn't care about politics will see political discussions as just a lot of sound and noise. Many who don't care about religion tune it out when it comes up as a topic of discussion.

Given this filtering process, how does anyone come to believe anything really new? One might get the impression that we are sealed into individual echo chambers in which no other viewpoints can ever enter. But we know that people do change their minds about important things all the time.

1. Three models of world view development

Let us consider three models of how people change. The first model, illustrated in Figure 1, can be called the "classical" model. In this model, people start with a set of unquestioned axioms that guide their thinking, which have been called, among other things, "presuppositions," "preconceptions," "paradigms," "assumptions," or "properly basic beliefs." These axioms provide filters for what new data from the external world can be considered. Once data are allowed for consideration, a person manipulates them by a set of logical operations, such as the law of non-contradiction, to arrive at logical conclusions. These conclusions are not necessarily true, but they have the same certainty as the axioms in the logical system.

As van Til, Polanyi, and others have pointed out,² this model suffers from the "garbage in, garbage out" effect. Nothing in this model allows a person to change axioms; the axioms control everything else. It might be possible to change some assumptions by *reductio ad absurdum*: if one derives a contradiction, then one of the premises must be false. However, in every logical system there will be some foundational axioms; if there are no alternatives to these, then the only option, given a perceived contradiction, is to assume that any experience that appears to contradict these axioms is wrongly interpreted.

² E.g., van Til 1955 and Polanyi 1966. For a recent discussion of this approach, sometimes called "foundationalism," see Taylor 1995.

Thus, for example, if one of a person’s axioms is “miracles are impossible,” then no logical process can ever allow that person to deduce that a miracle has happened. Evidence for miracles, whether seen with one’s own eyes or reported by others, will pass through a filter controlled by the higher axioms, so that it will be either ignored or explained away in terms of allowed explanations, such as deception, hallucination, or extreme luckiness, no matter how improbable.

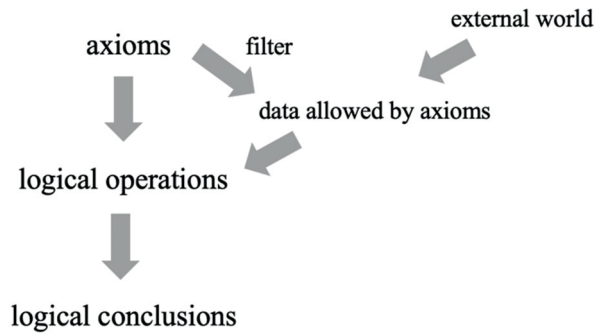


Figure 1. The “classical” model of world view development

How does one get the controlling axioms, then? In the past few centuries, there have been three main lines of thought. In classical foundationalism, represented by Rene Descartes (e.g. Descartes 1912), all legitimate axioms must be “self-evident” truths, such as “out of nothing, nothing comes,” or “I think, therefore I am.” The results of this approach can be impressive. For example, the geometry of Euclid starts with just a few apparently undoubtable axioms and derives a whole host of results in geometry. The elegance of Euclid’s work was one of the main motivations for Europeans adopting this approach as a model for all knowledge, after the rediscovery of the Greek classics in the Renaissance. Similar results can be obtained in classical apologetics (see, e.g., Sproul 1984).

Many later writers, however, found that much of life remains outside the domain of this small number of apparently self-evident axioms. How

do we know what is right and wrong, morally, or what is important to do? As I have discussed elsewhere (Snook 1995), authors over the years have proposed numerous self-evident axioms which contradict each other; John Stuart Mill proposed that it is self-evident that we should seek the greatest good for the greatest number of people (Mill 1863), while Ayn Rand argued that the exact opposite is self-evident, that we should all seek the greatest good just for ourselves (Rand 1970). Some Christian authors have argued that belief in God falls into this category, while atheists categorically rule it out.

In reaction to this seemingly arbitrary selection of self-evident truths, the existentialist and postmodern philosophies which dominated the West after World War II taught that we must create axioms by bare choice; in fact, this creation of axioms is the greatest act of human freedom.³ This approach, however, means that no one has any tools of persuasion to change anyone else's mind; if they have made an axiomatic choice to rule out what I believe, there is nothing more I can say. More recently, critical theory has come to the forefront, which says that the axioms and basic assumptions of most people come from power brokers in society who make the rules.⁴ This leads to a power struggle instead of an attempt to persuade. In general, the art of persuasion is all but dead in our society.

The presuppositional school of thought (Van Til 1955, Frame 1987) in Protestant theology can be seen as a variation of existentialism, with roots in Kierkegaard.⁵ Both of these can be represented by the model shown in Figure 2. The left side of this figure represents a system very much like that of Figure 1. It is possible, however, to leap to a new set

³ In particular, as argued by Nietzsche and Feyerabend. For a review of these authors and their influence, see Bloom 1987.

⁴ Critical theory has received much attention lately; for a balanced discussion, see Keller 2020.

⁵ E.g., Cornelius van Til quoted Kierkegaard favorably (van Til 2015): "To use a phrase of Kierkegaard, we ask how the Moment is to have significance. Our claim as believers is that the Moment cannot intelligently be shown to have any significance except upon the presupposition of the biblical doctrine of the ontological trinity. In the ontological trinity there is complete harmony between an equally ultimate one and many. The persons of the trinity are mutually exhaustive of one another and of God's nature. It is the absolute equality in point of ultimacy that requires all the emphasis we can give it. Involved in this absolute equality is complete interdependence; God is our concrete universal."

of axioms, after which one operates rationally within a new view of the world. In this model, no logical process deduced from the original axioms can overturn those axioms, and therefore the adoption of new axioms must be a fundamentally irrational process.

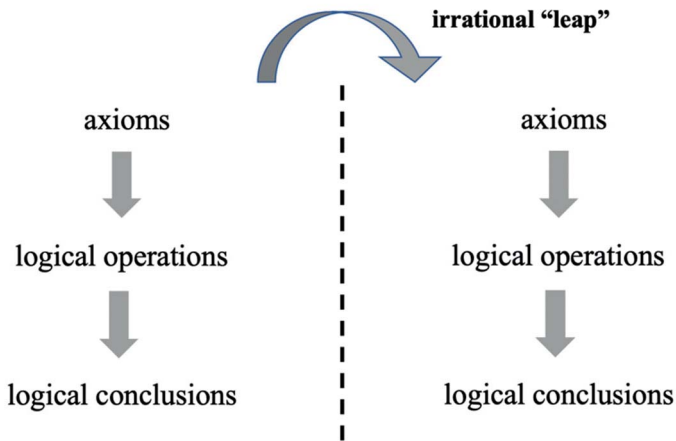


Figure 2. Presuppositional model of world view development. The same filtering of external data as shown in Figure 1 is assumed here, but not shown

This model has the appeal that it makes any favored belief system an impenetrable fortress. If I presuppose that Christianity is true, then by definition, no evidence can get through my filters to cause me to deduce that Christianity is untrue. I can have a sense of absolute certainty without any possibility of refutation.

The problem, of course, is that anyone can use this approach to defend anything. Not only Christians, but Mormons, Muslims, new-age spiritualists, and anyone else can also make their core beliefs into unassailable presuppositions. As in the postmodern approach, the art of persuasion is killed. This may be appealing for those who do not like arguments, but it cannot account for the fact that many people do indeed have the experience of being persuaded to change their beliefs. It is fundamentally

a defensive posture, with little persuasive power. Many young Christians have been told, “Just believe!” but as they grow older, have found this approach unsatisfying.⁶

This brings us to a third model, proposed here, with roots in Thomas Kuhn’s model of scientific revolutions, and with some similarities to the work of MacIntyre and Taylor (e.g., MacIntyre 1977 and Taylor 1995). The first aspect of this model is illustrated in Figure 3. Instead of having absolutely certain conclusions based on undoubted axioms, this model accounts for the fact that people have increasing and decreasing degrees of certainty about their basic assumptions, according to their experience.

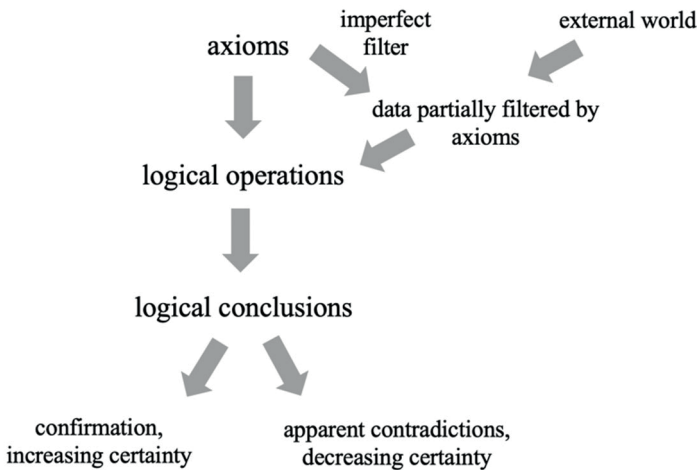


Figure 3. The “tentative consideration” model, Part 1

This arises from several causes. First, the set of assumptions in a person’s axiom list is not necessarily self-consistent. People quite frequently assume many things which cannot all simultaneously be true, because they do not follow every thought to its logical implications. Second, no one’s filters are able to keep out all unexpected data. Some things register with us

⁶ See Appendix A for further discussion of presuppositionalism in conservative Protestant apologetics. For an extended critique, see Sproul 1984, Part III.

whether we like it or not. For example, I may want to tune out a person yelling at me, but the sound will get through to me in some fashion, even so.

This implies that as we live life, our sense that we know how to negotiate the world can increase or decrease. Experiences that agree with our initial axioms lead to a sense of increasing certainty that the world makes sense, as interpreted through our filters. Experiences that seem to contradict our basic axioms lead to a sense of tension, that the world doesn't make sense. This experience is sometimes called "cognitive dissonance" (Festinger 1957) or diminished "coherence" (Olsson 2021). Often this sense of unease is not explicit or conscious, but exists as a subconscious tension. *All* world views have some degree of tension, because the world is a big and complicated place, and none of us can completely understand all of it. Even if we could prove that we had the right axioms, we could still fail to work out the implications of those correctly, due to failures of our logic; also, we have only partial experience with the world. Additionally, as discussed by MacIntyre and Taylor, the existence of other people holding different views of the world is itself a source of tension, which demands explanation.

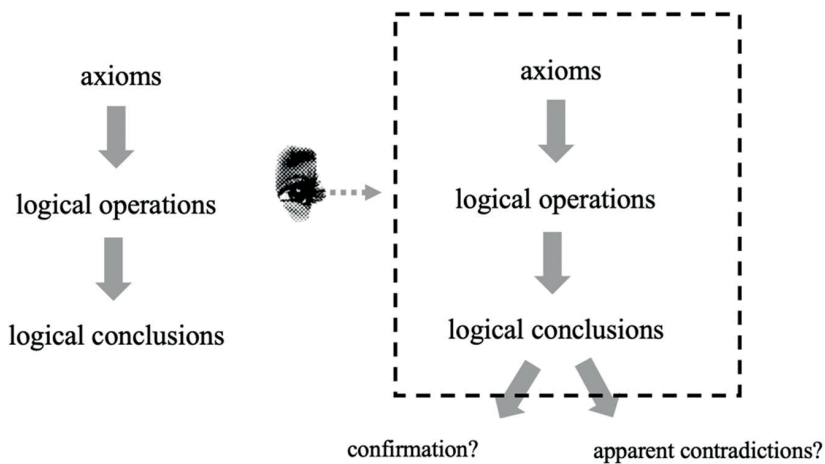


Figure 4. The “tentative consideration” model, Part 2. A person holding one set of axiomatic assumptions (left) may consider the implications of believing a different set of axiomatic assumptions

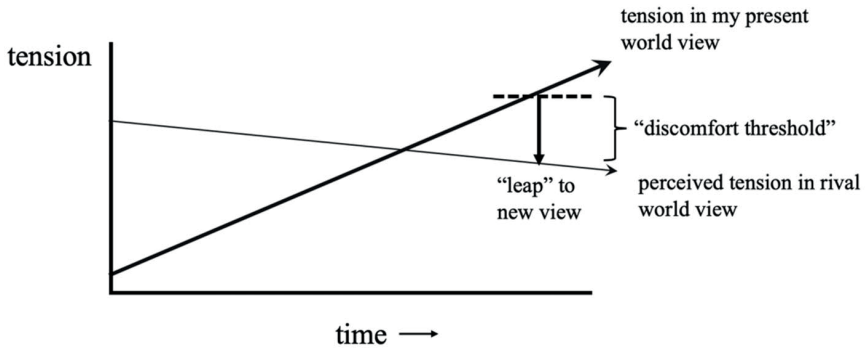


Figure 5. The “tension gap” in comparing two world views

The second part of this model is shown in Figure 4. A person living within one system, shown on the left, encounters a different world view. Without committing to that view, the person possesses the ability to imagine that he or she does hold that other view of the world. This is a fundamental property of the human imagination, to be able to put ourselves in the place of others. The rival world view may be encountered by meeting a person with that viewpoint, by reading or hearing about it, or by an act of private imagination. For example, Einstein imagined what physics would be like if one did not assume that space and time were absolute, even though no one else tried to persuade him of this.

A person may go quite a long time, perhaps years, considering a rival world view without committing to it. A person may consider more than one alternative world view, as well. During this time, tension in his or her own world view may rise, until such a point that the perceived tension in the rival view is significantly less, as illustrated in Figure 5.

Most people do not quickly change views on the basis of a simple assessment that another view has less difficulties. In general, people can endure a certain amount of tension, that is, a sense of inconsistency to some degree. However, most people have a threshold of discomfort which, if passed, will lead them to jump to a viewpoint with significantly lower perceived tension. This transition has much in common with phase transitions in physics, in which a sudden jump in properties of a system oc-

curs as a parameter is changed continuously over time; for example, the change from water to ice or the change from a non-magnetic to a magnetic solid. To an outsider, this change of views may appear to be an irrational leap, but it is often actually the result of a lengthy time of tentative consideration and sense of tension.

Note that a single inexplicable experience almost never causes such a transition. Karl Popper argued that a single contradictory datum will overturn a scientific theory (Popper 1982), but for such to occur, one would have to absolute confidence in the new datum, namely, that it was recorded and interpreted correctly, and scientists almost never have that high a degree of confidence in experiments. For example, a few years ago, a reputable group of scientists reported a measurement of faster-than-light signal propagation (Adam 2011). Almost all other physicists assumed that they had made a mistake somewhere in their measurements, because Einstein's theory of relativity is so well established by thousands of experiments, including the Global Positioning System used by everyone's smart phones. A mistake was finally found (Brumfiel 2012, Cartlidge 2012), although the original experiment had been done very carefully. Had the evidence continued to mount for faster-than-light signal propagation, however, physicists would have started to take it more seriously. In the language of the model we are considering, the tension would have risen, possibly to the point that it might have driven a "Kuhnian revolution."

Thomas Kuhn's model has been critiqued in many ways (see, e.g., Wray 2021); the most germane critique in the present context is that Kuhn envisioned this type of transition as occurring only rarely, once in a lifetime perhaps, with a complete change of basic assumptions. In his view, apart from a revolution, all scientists always do "normal science" without questioning any of the established axioms of their field. However, as pointed out by Tony Leggett (Leggett 1986, Leggett 2020), many mini-revolutions also occur on a regular basis in science; MacIntyre 1977, Seitz 2012 and Angel 2017 have argued along the same lines, that many changes of belief occur in normal life which entail continuity with some prior background. In addition to very basic assumptions about how the whole world works, there are also subsets of our paradigmatic assumptions which can be

quite stable until they are overturned. In my own field of solid state physics, for example, superconductivity was assumed to be an intrinsically low-temperature phenomenon until new experiments showed high-temperature superconductivity (Strongin 1987). To this day, there is no consensus on how the new high-temperature superconductivity works. This type of mini-revolution continues all the way down the line, to a graduate student who is stumped how to solve a problem until dropping a wrong assumption, and to a first-year undergraduate who at first doesn't believe an introductory physics textbook, but then is suddenly able to "get" it.⁷

The key element of Kuhn's model used here is the sense of buildup of tension in one view of the world, which can lead to an apparently sudden change when a rival view is found that appears to resolve that tension. This can happen not only at the most basic level of fundamental beliefs, but also at many lower levels. Figure 6 illustrates this type of hierarchy of assumptions.

At a very shallow level, I may assume something (e.g., that another person likes me), and come to change my view based on new evidence (such as the person repeatedly ignoring me).

That change does not challenge my deepest assumptions, although it may be painful. At a deeper level, I may come to doubt my entire approach to interacting with people, and make a change in my whole personality. At an even deeper level, I may begin to doubt my fundamental assumptions about how to interact with reality. In the area of religion, at the shallowest level a person may realize that a Bible verse or passage can be interpreted validly in a different way. At a deeper level, a person might switch schools of theology; for example, to embrace Calvinism (a traumatic transition for many Christians I have known) or to believe in ongoing miraculous gifts of the Holy Spirit. At the very deepest level, a person may question whether God exists, or whether any claim to truth by anyone can be believed.

⁷ Several studies have shown that the major difficulty that student have with physics is not the mathematics, but that they don't believe it is true. When asked what will happen in a given situation, a common reply from a student is, "Do you want me to tell you what I really think will happen, or the physics answer?" See, e.g., Tobias 1994.

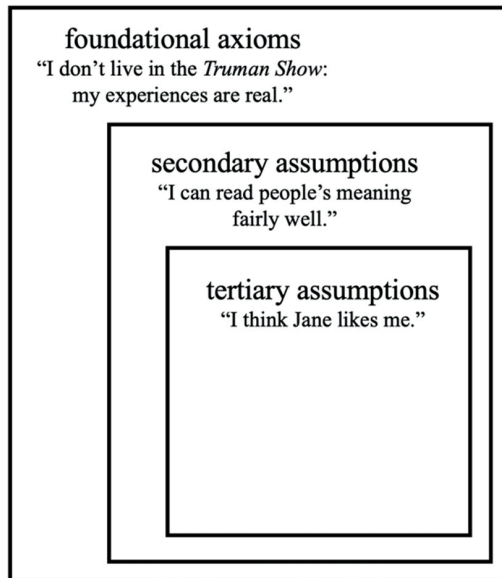


Figure 6. Different levels of assumptions embedded within more basic axiomatic frameworks

Because of this hierarchy of assumptions, a change of viewpoint is often accompanied by “throwing the baby out with the bathwater.” A person may bundle several higher- and lower- level assumptions into one package, and throw out the whole bundle in favor of a new world view. For example, a person raised in a legalistic or anti-intellectual church may reject Christianity altogether. Instead of questioning whether that church represents authentic Christianity, that person gives that church his or her highest allegiance by making it the true representative of Christianity, and rejects the whole. In the same way, an atheist who becomes a Christian may feel everything he or she learned earlier was lies, and adopt all manner of conspiracy theories or fringe religious views after becoming a believer.

The model of tentative consideration presented here allows many sources for unquestioned assumptions at every level. Some might be in-born; there is good evidence that all people start out life with the ba-

sic tools of logic and inductive learning, perhaps with a predisposition to trust parents, and perhaps with a predisposition to believe in God (Keleman 2005, Bloom 2007, Barrett 2012). Some tacit assumptions may be learned at a very early age, from parents and culture.⁸ Some may be self-taught (for example, coping mechanisms by abused children). In every one of these cases, unspoken assumptions can be overturned. This is true even of the inborn basic assumptions we associate with rationality, such as the law of non-contradiction or the trustworthiness of the senses. We know these can be rejected because people throughout history have convinced themselves to adopt views like mysticism (embracing contradictions) and solipsism (skepticism about all experience).

The model presented here also does not require that people are rational all the time, or as rational as they can possibly be. To the contrary, as discussed above, most people do not understand the implications of every tacit assumption they have made. People also possess the ability to turn off their rationality and allow themselves to be controlled by emotion and feelings (or drugs) for a time. Even in this context, they can feel more or less tension to the degree that they think rationally. Tension may increase in a person's life based on new experiences, or without any new experiential data, solely from that person becoming more rational and thinking through the implications and inconsistencies of assumptions already held. This model also does not presume that every person is aware of a viable rival model. In cases where there is no viable alternative, tension can still be experienced as a pervasive feeling that the world does not make sense. Some people may actually be driven to mental illness by this feeling. People who experience tension but are not aware of any rival views may switch immediately to a new rival view as soon as they hear of it, because it makes sense of what previously had no explanation.

This model has some elements in common with the “infinetism” of Peter Klein (Klein 2013), which posits an unending sequence of rechecking of assumptions, in which no belief has unquestioned foundational status, and with the “coming-to-know” view of Angel and Seitz, who have argued, based on correspondence with measured brain states, that peo-

⁸ For a recent discussion of tacit assumptions, see Trueman 2020.

ple move toward beliefs that give successful predictions (Seitz 2012, Angel 2017). While Klein's views have been criticized for entailing infinite regress (e.g., Gillett 2003), the model presented here, as well as the work of Angel and Seitz, by directing our attention to the *process* of believing rather than to a static concept of justified belief, emphasizes that whether we can justify it or not, we all in fact *do* question every level of our beliefs on a regular basis. This doesn't imply a constant state of "blowing with every wind," because beliefs can become settled when they are perceived to have a high degree of internal coherence and little tension arising from incorrect predictions.

Although this model has elements in common with prior views, it directs us to three crucial elements of the belief process:

- 1) Although we employ filters based on our presuppositions to keep unwanted experience and ideas away from our attention, these filters are not invincible; undesired experience can force itself on our cognition and cause either conscious or unconscious tension.
- 2) Sudden changes of belief can occur, which appear to the outsider to be discontinuous, due to a buildup up of pressure, leading to a snap action similar to a physical phase transition; indeed there may be a physical correspondence with a brain-state transition. As with a material phase transition, tension can arise in a continuous process until an internal threshold is reached.
- 3) These changes of belief can only occur when there is the perception of a viable alternative belief; in the absence of a viable alternative view, rising tension may simply lead to anguish and/or mental illness. Viability can be assessed because we possess the ability to imagine that we believe a rival view, without yet committing to it.

Conclusion

There is a growing consensus in the fields of psychology and philosophy that belief is a dynamic process in which we have some domains of confidence based on successful predictions of our experience and internal logical consistency, which together give us a sense of coherence, while

in other domains we can make changes, sometimes sudden, based on rising tension coupled with the perception of a viable rival alternative that would have less tension. No level of belief is automatically exempted from this process, although some beliefs may be very deeply held; these deep beliefs in turn influence, but do not completely control, what experiences we allow into our consciousness and how we interpret them.

This general approach applies to all of life, including beliefs that may be called scientific, religious, pragmatic, spiritual, or personal. In each case, we seek to reduce tension by making general assumptions about how the world works, which can then go unquestioned for a time. The “world” we need to explain includes how the physical world outside us works, our internal feelings, and what people tell us.

Some Christian apologetics approaches insist on bare assertion of fundamental beliefs, out of the fear that questioning them will create a sense of uncertainty about everything. To the contrary, recognition of how people actually form and change beliefs allows us to distinguish between well-established beliefs and other beliefs that we may more easily alter or discard. It also allows us to have better dialogue with others of different beliefs when we recognize that they have different weights of emphasis on what creates tension within their world view.

Appendix A.

Comparison to some Christian presuppositional approaches

Several different approaches to epistemology in conservative Protestantism can be called “presuppositional.” As discussed in the main text, many presuppositional approaches are primarily concerned with the question, “On what basis can I say I know, now?” as opposed to the question addressed here, namely, “How do I come to know?” Protestant presuppositionalism is a version of foundationalism that stems from the work of Cornelius van Til of Princeton seminary in the early 20th century (van Til 1955); Van Til has had enormous influence in conservative Protestant theological circles. As mentioned in the main text, van Til’s work was influenced by Kierkegaard’s existentialism, and differs primarily in that

van Til asserted the truth of the entire Bible as axiomatic, while Kierkegaard, also a Christian, focused on belief in and relationship with God as the starting point.

One modern version of presuppositionalism is associated with Alvin Plantinga (Plantinga 2000), who has roots in the same Reformed theological tradition as Cornelius van Til. Along with others, Plantinga has argued that some beliefs are “properly basic;” that is, that they must be asserted as axiomatic and cannot be derived from other, prior premises. This is consistent with the work of Gödel and others who showed that every system requires some assertions or choices among options that cannot be derived algorithmically from within that system (for a popular review of the impact of Gödel, see Hofstadter 1979). A second school of presuppositional thinking is associated with John Frame (Frame 1987), who has worked within a more explicitly theological framework.

The work of Plantinga, Frame, and others argues that a person can check for self-consistency within an overall system defined by unquestioned presuppositions. However, as discussed in the main text, every system has some tension due to a lack of coherence and agreement of predictions with experience, so that the mere existence of some inconsistency cannot be used to overthrow a full world view. The model of tentative consideration presented in the main text of this paper says that we possess the ability to compare world-view structures, with different sets of unquestioned beliefs, according to the different levels of tension they generate for us. Within each framework, presupposed beliefs cannot be derived from other knowledge, but our overall choice of a framework, including its underived presuppositions, can be compared with other frameworks for its overall fit to our experiences and for its degree of internal coherence – which makes better sense of the whole world? Not only can this occur, we do it all the time.

Frame 1987 argues that we cannot adopt the premises of a madman in trying to convince him to be sane, with the implication that Christians cannot acknowledge the validity of the knowledge of non-Christians. This has in some cases led to evangelistic approaches that amount to bare assertion of Christian truths. There are at least two flaws with this argu-

ment. First, as a Christian, I can affirm that some, though not all, of what a non-Christian experiences and believes is valid, because all people are made in the image of God. Because of this, as discussed in the main text, no one is actually able to perfectly filter out unwanted experiences. Also, as discussed in the main text, people can tentatively hold in their minds alternative views. For example, as a Christian I can adopt a non-Christian view, not as my own committed viewpoint, but for the sake of argument, and I can ask the non-Christian to do the same with my views. I do not need to create a logical chain that leads from the non-Christian's set of assumptions directly to Christianity.

Care must be taken to distinguish between how one justifies a belief within a single system, and how one compares systems as a whole. A presuppositionalist taking Frame's approach might argue that the assumption made here, that people cannot filter out absolutely everything they do not want to hear, is itself based on the belief that people are made in the image of God, which in turn follows from a properly basic belief in the existence of God. This is true for the Christian, but it leaves out the fact that other world views may justify the non-impregnability of the senses for other reasons, or may make it a properly basic belief on its own. Assuming the reliability of the senses and the non-invincibility of our filters does not reduce the set of allowed world views to just one.

A third school of thought called presuppositional is associated with Francis Schaeffer (e.g. Schaeffer 1968), a disciple of Van Til. Schaeffer's approach in fact is quite compatible with the model presented here, and has been critiqued as not truly presuppositional (Reymond 1976). Schaeffer famously said, "Scientific proof, philosophical proof, and religious proof follow the same rules" (Schaeffer 1968), and "The Christian must have the integrity to live open to the question as to the possibility of his being 'taken in' by his Christian commitment" (as quoted in Reymond 1976). This is fundamentally the same viewpoint as presented here.

Schaeffer's approach to apologetics was famously successful in bringing people to Christianity. In his approach, one starts by identifying the basic presuppositions in each world view, and then aims to demonstrate that the Christian world view has less overall tension given the totality

of our experience including internal experience and credible testimony from history. One of his personal catchphrases was that the test of any world view is, “Can I live with it?”

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