Changes in Version 2008.01.24

Preface, seventh paragraph

Deleted the second sentence: "Intellectual disciplines provide us with a variety of useful ways of organizing our sensations of reality into beliefs."

Changed "live wisely" to "decide wisely" in the second to last sentence.

Preface, ninth paragraph

"In general, we move ever closer to determining the truth by means of a recursive process that begins with finding a problem to solve and ends with learning from the experience of implementing the chosen solution to this problem. I refer to this process as decision-making. Given this expansive definition of decision-making, we move ever closer to determining the truth by deciding ever more wisely. We can decide ever more wisely by improving the factors of deciding wisely. These factors include practical wisdom, trust, liberty, capital, and time."

was changed to:

"We move ever closer to determining the truth by deciding wisely, where deciding wisely is the recursive process that begins with finding a problem to solve based on the timeless end of determining the truth. We can improve the process of deciding wisely by improving the factors of deciding wisely. These factors include practical wisdom, trust, and liberty."

Preface, twelfth paragraph

Changed "deciding more wisely" to "deciding ever better" in the second sentence.

Preface, thirteenth (last full) paragraph

Changed "living wisely" to "deciding wisely" in the second sentence.

Changed "following this strategy" to "applying this strategy to the problem of living well" in the fourth sentence.

Chapter 1, Practical Wisdom, title

Changed title to "Deciding Wisely."

Chapter 1, Excellence in Living, first paragraph

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Changed "wise in satisfying their wants but are" to "efficient in satisfying their wants but" in the first sentence.

Chapter 1, Excellence in Living, second paragraph

Changed "The wise" to "People who seek to live wisely" in the second sentence.

Chapter 1, A Timeless Model for Living Wisely

Changed "Wisely" to "Well" in the title.

Chapter 1, A Timeless Model for Living Well, first paragraph

"We seek to live wisely by seeking to make the best use of our knowledge in our quest to live well. We live wisely by deciding wisely.⁸ We make mistakes. If we are wise, we learn from our mistakes. If we are wise, waste is a regrettable by-product of learning."

"⁸ Decision-making is the process that begins with finding a problem to solve and ends with learning from experience. Ideally, it includes (1) finding a problem to solve; (2) formulating alternatives; (3) evaluating alternatives; (4) choosing an alternative; (5) implementing the chosen alternative; and (6) learning from the experience. Practically, we balance the costs and benefits of decision-making. Most of our decisions are too small to justify all of these steps.

was changed to:

"We seek to live well by deciding well. Ideally, deciding includes (1) finding a problem to solve; (2) formulating alternatives; (3) evaluating alternatives; (4) choosing an alternative; (5) implementing the chosen alternative; and (6) learning from the experience. Practically, we balance the costs and benefits of deciding. Most of our decisions are too small to justify all of these steps.

"From the timeless view, we find problems to solve using tools based on determining the truth about living well. This prevents us from being blinded to the possibility of learning, that is, the possibility of replacing knowledge for non-knowledge resources in living well. This is the essence of deciding *wisely* as opposed to deciding *rationally*.

"Deciding wisely as defined here does not mean that the process of deciding was perfect. It only means that we use timeless tools to help us to find problems to solve and temporal tools to help us solve chosen problems. We make mistakes. If we are wise, we learn from our mistakes. If we are wise, waste is a regrettable by-product of learning by doing."

Chapter 1, A Timeless Model for Living Well, new fourth paragraph

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Changed "We embed" to "When we fail to decide perfectly, we embed" in the first sentence.

Chapter 1, A Timeless Model for Living Well, last paragraph

Changed "Four" to "Three" in the second sentence.

Deleted the second to last sentence: "The fourth is capital, which we need to carry out our choices."

Changed "freedom, and capital" to "and freedom" in the last sentence.

Changed "live well" to "decide wisely" in the last sentence.

Chapter 2, Production, first paragraph, last sentence

"To produce well is to produce (ever more) wisely."

was changed to:

"Producing well calls for deciding wisely."

Chapter 2, Profit, first paragraph, first sentence, footnote

Changed "deciding wisely" to "deciding well" in the first and second sentences.

Changed "deciding wisely" to "deciding well" in the first and second sentences.

Changed "foolishly" to "poorly" in the fourth sentence.

Chapter 2, Profit, first paragraph

Changed "is to decide (ever more)" to "calls for deciding" in the second sentence.

Deleted the last sentence: "We owe it to ourselves to learn to thrive in winds and survive in gales of creative destruction."

Chapter 3, title

Changed the title from "Science" to "Believing Well."

Chapter 3, Introduction

Inserted the following into a new section:

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"Introduction

In the first chapter, we saw how the distinction between the timeless and the temporal can help us to live well. In this chapter, we will see how this distinction can help us to believe well.

"Eighteenth century Scottish Enlightenment philosopher David Hume explains why believing well is timeless end. We can never be completely certain that the way that we generalize our experiences is true until we experience all that can be experienced. For example, we cannot be certain that all of the marbles in an urn are white until we examine all of the marbles in the urn. Until we examine the last marble, there is always the chance that the next marble we examine will not be white. Philosophers call this the problem of induction.

"Nineteenth century British philosopher John Stewart Mill provides us with a famous real world example of Hume's problem of induction. Prior to the European discovery and exploration of Australia, Europeans believed that all swans are white. The European discovery of a new Australian bird species led Europeans to change this belief to the belief that all swans are either white or black.

"Mill intended his "black swan" example to show how established empirical facts may be overturned by a single unexpected event. The complete history of the discovery of this new species also shows us how such an event may change our system of concepts. The Europeans originally classified the new species of bird in a new genus, *chenopis*, rather than the "swan" genus, *atratus*. Under the genus *chenopis*, the new birds were as distant from swans as cheetahs are from domestic cats. Under this genus, the Europeans did not need to change their belief that all swans are white. It was only after the new birds were reclassified into the genus *atratus* did the Europeans need to change their belief about the color of swans. The problem of induction is more complex than Mill's black swan example leads us to believe it to be.¹

"Philosopher of science Thomas Kuhn provides us with concepts for describing the two basic ways that we respond to unexpected events. Kuhn saw testing beliefs within a given system of concepts to be normal science and testing beliefs across belief systems to be extraordinary science.² Following Kuhn's lead, an unexpected event that leads us to change our beliefs within a given system of concepts is ordinary; an unexpected event that leads us to change our system of concepts is extraordinary. The decision to discard the belief that all swans are white rather than to create a new genus was ordinary. The original decision to create the new genus of *chenopis* was (a bit) extraordinary.

"From the temporal view, this expanded view of the problem of induction raises sociological questions about how we collectively choose to reduce our sensations to words. These questions include who chooses, why they choose as they do, and why the rest of us accept what they choose. Answering these questions usually involves personally held values that transcend the problem at hand. These values include such things as the good, the truth, and justice.

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"The great danger with thinking in terms of values is confusing the temporal with the timeless. If we are not careful, we can confuse values based on what we currently know with values based on all that can be known. We can avoid this confusion by capitalizing timeless values.³ Using this convention, (1) to seek to live well is to pursue the Good; (2) to seek to believe well is to pursue the Truth; and (3) to seek to live and work with others well is to pursue Justice.

"From the timeless view, this expanded view of the problem of induction raises a single question, which is what system of concepts best helps us to believe well. Answering this question calls for considering the ultimate end of believing well. Is it a means of pursuing the Good? Is it a means of pursuing the Truth, which is to say an end in itself? Is it a means of pursuing Justice? Is it all of these things? Is it all of these and more?

"From the modern liberal view, there is no right or wrong answer to this question. This is because there is no disputing what end or ends that we should value most highly. There is only the practical problem of maintaining the freedom to choose what matters most to us, which we do by maintaining a good society, a society in which the least well-off members have what they need to live decent lives.⁴

"The modern liberal belief system is temporal. Like other temporal belief systems, it tends to blind us to the best problems to solve. A kind assessment is that it is a reasonable, but incomplete response to the schism between Plato and Aristotle at the core of Western thought. A less kind assessment is that it is little more than childish nihilism – the temper tantrum of people who are unwilling to accept believing well as a timeless end. A second less kind assessment that it is nothing more than a useful vehicle for special interests to maintain their special favors. The most enlightening of these three assessments is the kind one.

"Plato would have us know the Truth, Justice, and Beauty by breaking free from the everyday concepts that cause us to see only the shadows of things, fighting our way out of the cave of ignorance, and stepping into the light of the Good. Once we are used to the light of the Good, we will be able to see the ideal forms – the unchanging elements and relations – that underlie all sensations of reality. In other words, Plato would have us break the stream of words that binds our minds to our personal mental worlds in order to embrace a stream of words that binds our minds to a universal mental world. This is not a rational process. It is a religious one. It is the mystical process of linking or relinking to something infinitely greater than ourselves.⁵ In sharp contrast, Aristotle called on us to refine our beliefs using his tool kit for refining beliefs, which we call Aristotelian logic. His approach is rational and ordinary, not religious and extraordinary.

"We can bridge Aristotle's temporal world of everyday thinking and Plato's timeless world of ideal forms by using Plato's ideal forms as the basis for the timeless tools we use to find problems to solve. The first step is to create the concept of a transcendent factor of deciding wisely. A transcendent factor is any factor that we cannot have in

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excess. Consider the three factors listed at the end of the first chapter. Of these, only practical wisdom is a transcendent factor. We can never have too much knowledge of how to decide wisely. Freedom and trust are not transcendent factors. We can have too much freedom, as is the case when a slave owner claims the freedom to own a slave. We can have too much trust, as is the case when a mark trusts a swindler.

"The second step is accepting the proposition that the process of deciding wisely is the same for all timeless ends that are transcendent factors of deciding wisely. This curious property arises from the self-similar nature of the process of deciding wisely.

"The third step is to recognize that the timeless pursuits of all of the transcendent factors of deciding wisely intertwine to form a single timeless pursuit. Consider the relation between the pursuit of the Good and the pursuit of the Truth. The Good and the Truth are transcendent factors of deciding wisely. We need the Good to avoid deprivation, which hinders deciding wisely. We need the Truth to avoid ignorance, which also hinders deciding wisely. We pursue the Good by deciding wisely, which calls on us to pursue the Truth. We pursue the Truth by deciding wisely, which calls on us to pursue the Good. Hence, the pursuit of the Good and the pursuit of the Truth intertwine into a single pursuit.

"Justice is also a transcendent factor of deciding wisely. We cannot work too well or live too well with others. In theory, we can learn more about Justice by considering how treating others well helps us to pursue the Good and the Truth. In thinking through theory, when we try to learn more about Justice by considering how treating others well helps us to pursue the Good and the Truth, we find ourselves continuously returning to the timeless pursuits of the Good and the Truth. If we are intelligent and honest, Hume's problem of induction thwarts all efforts to reduce the infinitely large problem of determining the truth about Justice to a finite problem. Further, the inexhaustibility of knowledge and our need to become part of something infinitely greater than ourselves thwart all efforts to reduce the infinitely large problem of determining the good about Justice to a finite problem.

"Twentieth century American moral philosopher John Rawls provides us with a way of putting our inescapable ignorance about Justice to good use. Rawls asks us to imagine what we should⁶ choose if we were ignorant of the circumstances of our birth.⁷ For this imagined original position of ignorance to produce a *completely just* timeless end, we must consider what timeless end we should want to guide intelligent life if we were *completely ignorant* of the circumstances of our birth, which includes ignorance of what species we will be and into what era we will be born. Under these conditions, we should want all intelligent life to make the best use of knowledge in the pursuit of a good life for all. In other words, we should want all intelligent life to revere life well.⁸ We pursue this timeless end of a good life for all by deciding wisely.

"The inexhaustibility of knowledge makes it as easy, if not easier, to cooperate across time as to cooperate across space. The ancient Chinese provide us a simple model for cooperating across time, "The debt that we owe to our ancestors, we pay to our

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descendents." Following this model, we can promote cooperation in revering life across both time and space with the moral imperative, "The debt that we owe to those from whom we have learned, we pay to others by deciding wisely."

"The scope of cooperation in deciding wisely is boundless. To perfect this cooperation, we need to reduce our sensations of reality to a form that is useful to all intelligent life. The gold standard of knowledge is the mathematical representation of the unchanging elements and relations (ideal forms) that underlie all sensations.

"The Ring of Truth

Pursuing one transcendent factor of deciding wisely calls for pursuing all transcendent factors of deciding wisely. This is a blessing, not a burden. It provides us with a more certain way of testing problems to solve before we attempt to solve them. Only if a problem is consistent with our current beliefs about all transcendent factors can we be reasonably certain that it is the best problem to solve. Only then can we say that the beliefs supporting our choice have the ring of Truth.

"There is an ancient belief that equates truth with beauty. Nineteenth century English romantic John Keats expressed this belief in the closing lines of his poem, *Ode on a Grecian Urn*:

"Beauty is truth, truth beauty, — that is all ye know on earth, and all ye need to know."9

"This ancient belief is not consistent with the modern belief that beauty is the quality of objects whose contemplation yields pleasure, much less with the modern belief that beauty is in the eye of the beholder. However, it is consistent with the timeless definitions of pleasure (pleasure-in-acting) and joy (pleasure-in-being) put forth in the second chapter. From the timeless view, *beauty is the defining quality of objects whose contemplation yields not only pleasure but also the joy that comes from improving our belief system*.

"To give us pleasure, an activity must not be too easy or too hard. An activity that is too easy bores us; an activity that is too hard overwhelms us. When the activity is contemplation, the object of contemplation must not be too simple or too hard to contemplate. Contemplating an object that is too simple bores us; contemplating an object that is too hard overwhelms us. Between these two extremes is a level of difficulty that allows us to lose ourselves in contemplation.

"What we find too easy or too hard depends on our knowledge of what we are contemplating. Knowledge may make objects easier to contemplate. This may make objects either more or less capable of yielding pleasure in contemplation. For example, knowledge of the structure of classical music may turn Beethoven's symphonies from being overwhelming to being beautiful. It may also turn grunge rock from being beautiful to being boring. At times, knowledge may also make objects harder to contemplate. This may make objects either more or less beautiful. For example, knowledge of the patterns of nature may turn Edo period architecture from being

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boring to being beautiful. It may also turn Rococo architecture from being beautiful to being overwhelming.

"To give us joy, an activity must improve our state of being. When the activity is contemplation, the object of contemplation must be novel enough for us to learn from it. If the object is not novel, we will not learn from it. If it is too novel, we will not be able to learn from it. As we learn more, objects that once gave us joy become mundane and objects that were once too novel become beautiful. This is especially true of scientific theories. Before we learn calculus, Newton's theory of gravity is too novel to give us joy. After we learn calculus, it has the potential to give us joy. With use, it becomes just another tool.

"The interplay of beauty and belief is complex. Out of this complexity emerges art that engages us on many levels. A great work of art, such as a story that can we can understand on more than one level, can change from being beautiful to being mundane to being once again beautiful. For example, as a child we may find Lewis Carroll's *Alice Through the Looking Glass* to be an enchanting bedtime story; as a teenager we may find it to be childish; and as an adult we may find in it to be an insightful look into the way that language governs the way that we perceive the world.

"This timeless definition of beauty helps us to explain why modern educators do not value music and the other fine arts as highly as Plato did. Plato saw music and the other arts as a means of transcending everyday life in order to find the Good. Modern educators do not value music and other fine arts as means of transcending everyday life in order to decide wisely. From the modern view, there is no difference between seeking beauty and seeking Beauty. There is no disputing taste.¹⁰ From the timeless view, there is a difference between seeking beauty and seeking Beauty. Art ought to do more than to shock us or speak to us. It ought to help us to decide wisely.

"The Elephant in the Room

There is yet another "ring of Truth" story here. It concerns the relation between the transcendent factors of deciding wisely and the values that people claim to seek when they seek to link or relink with something infinitely greater than themselves.

"The essential theological explanation of this coincidence is simple and straightforward. The Creator created us with the need to seek the Creator. We seek the Creator by deciding wisely. In doing so, we deify the Truth and demonize the ignorance that hinders us. The devil lies in the temporal details.

"The essential evolutionary explanation of this coincidence is nearly as simple and straightforward. We evolved to have the need to seek to become a part of something infinitely greater than ourselves, which is useful in securing the best chances of survival for ourselves and our offspring. From this religious impulse and our intellect emerged crude means of deciding wisely. Over time, we refine our means of deciding wisely by deciding wisely. We learn by doing.

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"Although these two essential explanations of this coincidence differ in their assumptions about the creation of the Universe, our instincts, and our abilities, they share the same means. Regardless of what set of assumptions that we choose to help us to find the best problem to solve, the process of deciding wisely, which includes the process of believing well, is the same for all of us. We are all as blind men seeking to know an infinitely large elephant."

"¹ W. V. O. Quine formally explained the difficulties the blurring of the distinction between statements within a system of concepts and changes to a system of concepts creates in his 1951 paper, *Two Dogma's of Empiricism*. What follows in the first section of this chapter confirms Quine's prescription for a holistic approach to meaning. With one major caveat, it also confirms Quine's statement that "Philosophy of science is philosophy enough." This caveat is that we define science as the timeless process of refining everyday thinking rather than the temporal result of refining everyday thinking."

⁴⁴ Kuhn, Thomas, *The Structure of Scientific Revolutions*, (Chicago: University of Chicago Press, 1962), chap X.

"³ To modern thinkers, who confuse the religious with the theistic, this convention appears to have theistic overtones. Properly conceived, it has religious overtones that may or may not be theistic."

"⁴ The primary source of this essential description of modern liberalism is John Dewey, who partially reconciled the pragmatic philosophies of Charles S. Pierce and William James with the idealistic philosophy of George Hegel."

"⁵ Note the similarity of Plato's ultimate end of believing well to the Vedanta school of Indian philosophy, which culminates in the individual soul (Atma) relinking with the soul of the universe (Brahman), and to Albert Einstein's desire to understand God's thoughts."

"⁶ Rawls uses a first person conditional statement to determine moral obligation. The grammatically correct term for expressing a first person conditional statement is 'should.' To American ears, 'should' implies a moral obligation rather than a hypothetical circumstance. Americans may choose to replace the grammatically correct 'should' with the idiomatic 'would.'"

¹⁷ Rawls, John, *A Theory of Justice*, (Cambridge, MA: The Belknap Press of Harvard University, 1971), chapter III."

"⁸ This expansive concept of justice does more than help us to satisfy our need to link or relink with something greater than ourselves. It is also useful to us in ways that are less directly bound to our nature. For example, we need countless forms of microorganisms to sustain not only our environment but also our bodies. Further, we

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can learn about life from virtually every other form of life. For more on the subject of revering life, see Appendix B.

^(*) Keats, John "Ode on a Grecian Urn" in *The Oxford Book of English Verse 1250-1900*, A. T. Quiller-Couch, ed. (Oxford: Clarendon, 1919), reprinted in Bartebly.com, http://www.bartelby.com/101/625.html 31 Dec 2007)."

"¹⁰ In Latin, *De gustibus non est disputandum*. At issue is not the belief that that tastes tend to remain stable over time, which is useful in making predictions about how people will act, but rather the belief that tastes ought to remain stable over time. From the temporal view of logical positivism, this distinction is the difference between a positive statement and a normative one. From the timeless view of deciding wisely, this distinction concerns the difference between the temporal and the timeless views of living well."

Chapter 3, Refining Everyday Thinking, last two paragraphs

"One of the most valuable results of this ongoing research program was the division of labor, which has given us expert producers of goods and services.

"Most expert producers base their concept of quality on both technical excellence and usefulness. They recognize that a technically perfect brass watermelon is still a brass watermelon, something that customers neither need nor want. In contrast, most experts in science base their concept of quality solely on technical excellence. We can correct this by defining science to be the process of refining everyday thinking. This timeless concept of science provides us with a vision of how best to improve the process of refining everyday thinking.¹⁵ It also reminds us that the temporal results of this timeless process are the truth rather than the Truth.¹⁶"

were changed to:

"This timeless concept of science provides us with a vision of how best to improve the process of refining everyday thinking.¹⁵ It also reminds us that the temporal results of this timeless process are the truth rather than the Truth.¹⁶ Less obvious, it strongly suggests that the way that modern academics have divided human inquiry into disciplines is flawed. This is especially true in the temporal way that they have grouped disciplines into the natural sciences, social sciences, and humanities.

"The first step towards fixing this modern, temporal scheme would be to change the name of the social sciences to the *intelligent life sciences*. The *intelligent life sciences* would include all of the disciplines that directly concern the research program of, by, and for intelligent life. The next step would be to subdivide this new group into the *ethical sciences, political sciences,* and *practical sciences*. The *ethical sciences* would refine our beliefs about the Good; the *political sciences* would refine our beliefs about 2 Justice; and the *practical sciences* would refine our beliefs about. The final step would be to change the name of the natural sciences to the *true sciences*.

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The *true sciences* would refine our beliefs about the Truth without concern for the Good, Justice, or Practical Wisdom. The humanities would continue to include all disciplines that concern the ring of Truth rather than the Truth per se. Arguably, this new means of grouping academic disciplines comes closer than the modern scheme to carving nature at its joints."

Chapter 3, Living Wisely, title

Changed title to "Refining Practical Wisdom."

Chapter 3, Refining Economic Stories, title

Changed title to "Refining Practical Stories."

Chapter 3, Refining Practical Stories, second paragraph

Changed "owe to ourselves" to "ought" in the last sentence.

Chapter 3, Refining Practical Stories, third paragraph, last two sentences

"As intelligent beings, we owe it to ourselves to use our intellect to pursue the timeless end of living well. In short, we owe it to ourselves to live wisely."

was changed to:

"As intelligent beings, we owe it to ourselves to use our intellect to seek to improve the endless process of living well, to live wisely. We live wisely by deciding wisely."

Chapter 3, Refining Practical Stories, fourth paragraph

Changed "live" to "decide" in the first sentence.

Changed "Worse, it" to "Worse, it often" in the second sentence.

Chapter 3, Refining Practical Stories, fifth paragraph

Changed "should" to "would" in the fourth sentence.

Chapter 3, *Refining Practical Stories*, seventh paragraph

Deleted "that we use to define what we need to live wisely" from the first sentence.

Added ", that is, to pursue the Good" in the second sentence.

Changed "make the most of their knowledge" to "pursue the Good" in the last sentence.

Chapter 3, Refining Practical Stories, last two paragraphs

"We also owe it to ourselves to weed out stories that fall short of our ideals. Moral philosopher John Rawls provides a means of judging stories. Rawls asks us to imagine what we should²⁵ choose if we were ignorant of the circumstances of our birth.²⁶ For this imagined original position of ignorance to produce a *completely just* timeless end, we must consider what timeless end we should want to guide intelligent life if we were *completely ignorant* of the circumstances of our birth, which includes ignorance of what species we will be and into what era we will be born. Under these conditions, we should want intelligent beings to live wisely and to devote themselves to helping others to live well. In short, we should want intelligent life to revere life. If we can agree that to live wisely is to revere life, then we can develop rules for weeding out stories. For example, we can weed out those that define who "we" are too narrowly.²⁷

"Over time, we will agree on ever more rules for weeding out both stories that we use to define what we need to live wisely and stories that we use to explain how to satisfy these needs. In our time, the stories that remain deserve our tolerance. We base this tolerance on our ignorance of how to live wisely rather than on the right to do as we please."

"²⁵ Rawls uses a first person conditional statement to determine moral obligation. The grammatically correct term for expressing a first person conditional statement is 'should.' To American ears, 'should' implies a moral obligation rather than a hypothetical circumstance. Americans may choose to replace the grammatically correct 'should' with the idiomatic 'would.'"

"²⁶ Rawls, John, *A Theory of Justice*, (Cambridge, MA: The Belknap Press of Harvard University, 1971), chapter III."

"27 For more on the subject of revering life, see Appendix B."

were changed to:

"We also owe it to ourselves to weed out members of the set of stories that fail to help us find what we need to pursue Justice. We pursue Justice by deciding wisely. As we saw in the EOQ/RTS example, deciding wisely is not the same thing as acting efficiently. Deciding wisely calls for us to progress towards the timeless ideal of a good life for all rather than the temporal ideal of a state of the world in which no one can be made better off without making someone else worse off.

"We can see the difference between deciding wisely and acting efficiently in the modern economic general equilibrium model. This model describes the conditions that yield the ideal temporal state of the world in which no one can be made better off without making someone else worse off. In modern economic terms, it describes the conditions for allocating scarce resources efficiently. The major condition is that the marginal benefits just equal the marginal costs of acting everywhere in the economy.

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This equilibrium condition determines what each factor of production receives. What is missing from this model is what we owe the people who created the knowledge that we use at no charge. As previously argued, *the debt that we owe to those from whom we have learned, we pay to others by deciding wisely*.

"At first glance, this argument does nothing more than to return us back to our starting point of pursuing Justice by deciding wisely. It does much more than this. It tells us to weed out any story about Justice that is based on the concept of efficiency. Less obvious, it tells us to weed out any story about Justice based on any temporal concept. This includes any story based on sustaining a good society. Deciding wisely, which is to say revering life, is much more than sustaining a good society. Consider what our lives would be like today if all previous generations of humans aspired to nothing more than a good society in an unchanging environment. We are morally obliged to leave the caves of our ancestors.

"Over time, we will agree on ever more rules for weeding out foolish stories. In our time, the stories that remain deserve our tolerance. We base this tolerance on our ignorance of how to decide wisely rather than on the right to do as we please."

Chapter 3, The Timeless Ideal, entire section

"The research program of, by, and for intelligent life aims at the timeless ideal of the best of all possible futures for the whole of life. We progress toward this ideal by deciding wisely.

"Deciding wisely is often a matter of converting new information into new applications of knowledge in our quest to live well. Each new application of knowledge creates the need to change other parts of the economy. In short, progress creates stress.

"People who make the best use of their knowledge first try to find a better problem to solve. Finding a new problem often increases the stress that they pass on to others. Having found what they believe to be the best problem, they relieve stress by acting efficiently. Acting efficiently lessens the stress that they pass on to others.

"In contrast, modern economics would have us adapt to stress by acting efficiently. Ripples of stress caused by shocks of progress would die out as we replace stress with knowledge of how to act efficiently. The system would tend toward a state of the world in which none of us can be made better off without making at least one of us worse off. This is the ideal state of Pareto optimal general equilibrium.

"The path toward the temporal ideal of Pareto optimal general equilibrium is not the path toward the timeless ideal of the best of all possible futures for the whole of life. To achieve the temporal ideal, we need to act efficiently. To achieve the timeless ideal, we need to decide wisely. As we saw in the EOQ/RTS example, acting efficiently is not the same as deciding wisely."

was deleted.

Chapter 3, A Crude Look at the Whole, first paragraph

"Imagine free people seeking to live ever more wisely. Living more wisely creates economic stress, the need to reallocate resources. As the amount of stress rises, people will spend resources responding to it, which will leave them fewer resources for experimenting with new ways of living more wisely. Stress will tend toward a "natural" level."

was changed to:

"Imagine free people seeking to decide ever more wisely. Deciding more wisely creates economic stress, the need to reallocate resources. As the amount of stress rises, people will spend resources responding to it, which will leave them fewer resources for experimenting with new ways of deciding more wisely. Stress will tend toward a "natural" level. People learn to thrive in winds and survive in gales of creative destruction."

Chapter 3, A Crude Look at the Whole, last paragraph, end

Added the footnote:

"³¹ This unrelenting pressure to progress suggests the metaphor of a near freezing river filled with blocks of ice of various shapes and sizes, which represent our stocks of useful knowledge. In complexity science terms, these stocks of knowledge are "frozen accidents." *The best way to avoid debacles is to prevent embacles, the piling up of stress. We prevent embacles by deciding well.*"

Chapter 3, Recursive Failures, third paragraph

Changed "mystically link or relink with something greater than ourselves" to "link or relink with something infinitely greater than ourselves" in the third sentence.

Chapter 3, Computer Models, last paragraph

Changed "make the best use of what they know" to "seek to decide wisely" in the second sentence.

Chapter 3, The Knowledge Revolution, title

Changed the title to "A Tale of Two Revolutions" and demoted it one level.

Chapter 3, A Tale of Two Revolutions, second paragraph

Changed "moral science" to "a timeless concept of science" in the first sentence.

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Changed "live wisely" to "decide wisely" in the last sentence.

Chapter 3, A Tale of Two Revolutions, last paragraph, last two sentences

"To do so well, we need to define economic science to be the study of the pursuit of the Truth and the Good, which is to say the study of the research program of, by, and for intelligent life. We need to define economic science to be the premier moral science."

were changed to:

"To do so well, we need to define economic science to be the science of practical wisdom."

Chapter 4, title

Changed the title from "Government" to "Governing Well."

Chapter 4, Introduction, first two paragraphs

"Timeless science is the process of determining what is truly good. The convention of distinguishing between temporal and timeless ends by capitalizing timeless ends helps us to explain timeless science. Following this convention, the truth is correspondence to reality based on what we currently know; the Truth is correspondence to reality based on all that can be known. The good is what we need to live well based on what we currently know; the Good is what we need to live well based on all that can be known. We need the truth to pursue the Good. We also need the good to pursue the Truth. Hence, the pursuit of the Good and the pursuit of the Truth are intertwined - pursuing one calls for pursuing the other. In as much as we are born with the need to live well, we are born with the need to pursue both the Truth and the Good. We are born to be researchers and research subjects in the research program of, by, and for intelligent life.

"We are not all knowing and all good: our truth is not the Truth; our good is not the Good. We are not even angels, beings without the worldly concerns that arise from physical bodies. Hence, we can benefit from intellectual tools for helping us to pursue the Good and the Truth, that is, for helping us to live wisely."

were deleted.

Chapter 4, Introduction, last paragraph

"The first chapter of this work introduced a strategy for learning to live wisely. The second chapter introduced timeless concepts based on this strategy. The third chapter applied these intellectual tools to the problem of how best to pursue the Truth and the

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Good. This chapter applies these tools to the problem of how best to govern the process of pursuing the Truth and the Good."

was changed to:

"The first chapter of this work introduced a strategy for learning to decide wisely. The second chapter introduced timeless concepts based on this strategy. The third chapter applied these intellectual tools to the problem of believing well. This chapter applies these tools to the problem of governing well."

Chapter 4, The Explicit Experiment, fourth paragraph

Changed "often been interpreted" to "recently been interpreted" in the fourth sentence.

Chapter 4, The Sovereign Story of Timeless Science, third paragraph

Changed "live wisely" to "decide wisely" in the second sentence.

Changed "living wisely" to "deciding wisely" in the second sentence.

Chapter 4, The Sovereign Story of Timeless Science, third paragraph, footnote

Changed "moral science" to "timeless science" and "refinement" to "timeless version" in the first sentence.

Changed "Moral science calls on" to "Timeless science calls for" in the fourth sentence.

Changed "(ever more) wisely, hence ever more justly" to "ever more justly" in the fourth sentence.

Deleted the third sentence: "Both are based on the belief that we ought to pursue happiness, which is the timeless result of the process of satisfying what we need to live well."

Chapter 4, Lower Trade Barriers, footnote

Changed "live more wisely" to "live better" in the last two sentences.

Chapter 4, Promote Timeless Science, title

Changed "Timeless" to "Practical."

Chapter 4, Promote Practical Science, first paragraph

Changed "timeless science" to "the science of practical wisdom" in the last sentence.

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Chapter 4, Promote Savings For Welfare, last paragraph, last footnote

"¹⁶ Here again, we see the difference between living wisely and allocating efficiently. From the timeless view of living wisely, we owe a debt to those who created the knowledge that we use at no cost. Albert Schweitzer's categorical imperative calls on us to pay this debt by revering life. In theory, this universal rule for living promotes the research program of, by, and for intelligent life better than any other universal rule for living. From the temporal view of allocating efficiently, our interest in how others choose to live is external to the problem of how best to allocate scarce resources. The modern economic solution to this externality problem involves making all information about how we choose to live our lives freely available to everyone else. Compared to the loss of all privacy, a universal welfare savings plan and progressive taxation does not look so onerous."

was deleted.

Chapter 4, Choosing Governments, first paragraph

Changed "live wisely" to "decide wisely" in the second sentence.

Afterword, first paragraph

Changed "living wisely" to "deciding wisely" in the third and fourth sentences.

Appendix B, Timeless Logic, title

Changed title to "Introduction."

Appendix B, Introduction, first paragraph

Changed "unethical theories" to "unjust stories" in the first sentence.

Appendix B, Practical Benefits of Mystical Oneness, last paragraph

Changed "mental worlds" to "concepts" in the third sentence.

Changed "mental worlds" to "belief systems" in the sixth and seventh sentences.

Changes in Version 2008.01.25

Chapter 1, Excellence in Living, second paragraph

Deleted the first sentence: "Choosing the right problem to solve is as important as choosing the right solution to a given problem."

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Changed "live wisely" to "decide wisely" in the new first sentence.

Chapter 2, Two Means of Living Wisely, title

Changed "Wisely" to "Well" in the title.

Chapter 2, Two Means of Living Well, first paragraph, first two sentences

"Again, we seek to live wisely by seeking to make the best use of our knowledge in our quest to live well. Aristotle and Spinoza provide us with different means of seeking to live wisely."

was changed to:

"Aristotle and Spinoza provide us with different means of living well."

Chapter 2, Two Means of Living Well, second paragraph

Changed "living wisely" to "deciding wisely" in the first sentence.

Chapter 2, Alternatives to Living Wisely, title

Changed "Wisely" to "Well" in the title.

Chapter 2, Recursive Failures, third paragraph

Changed "reality" to "timeless elements" in the first sentence.

Deleted the second sentence: "Reality includes timeless elements."

Deleted the new third sentence: "Including these timeless elements in the stories that we use to guide our actions makes these stories timeless."

Chapter 4, Sovereignty, first paragraph

Changed "living and working together" to "living or working together" in the first sentence.

Chapter 4, Sovereignty, second paragraph

Changed "living and working together" to "living or working together" in the first sentence.

Chapter 4, Economic Policy, first paragraph

Changed "living wisely" to "deciding wisely" in the first and second sentences.

Chapter 4, Control the Money Supply Passively, first paragraph

Changed "live wisely" to "decide wisely" in the first and fifth sentences.

Chapter 4, Promote Practical Science, first paragraph, second and third sentences

"The wiser we live, the harder it is to know what we need to live more wisely. Further, the wiser we all live, the faster things change. The faster things change, the harder it is to know how to live wisely."

were changed to:

"The better we decide, the harder it is to know how to decide better. Further, the better we all decide, the faster things change. The faster things change, the harder it is to know how to decide well."

Chapter 4, Promote Savings for Welfare, first paragraph

Changed "live" to "decide" in the first and third sentences.

Chapter 4, Promote Savings for Welfare, second paragraph

Changed "live more" to "decide" in all (4 occurrences).

Chapter 4, Promote Savings for Welfare, third paragraph

Changed "live more" to "decide" in all (4 occurrences).

Chapter 4, Promote Savings for Welfare, last paragraph

Changed "live more" to "decide" in the last sentence.

Chapter 4, Choosing Governments, first paragraph

Changed "Governing wisely" to "Governing well" in the first sentence.

Changed "live" to "decide" in the first sentence.

Changed "how wisely they govern" to "how well they govern" in the last sentence.

Changes in Version 2008.01.30

Preface, seventh paragraph

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Changed "rectify all of" to "refine" and "wisely" to "well" in the second sentence.

Preface, eighth paragraph

Changed "rectifying beliefs" to "refining our beliefs" in the last sentence.

Preface, ninth paragraph

Changed "wisely" to "well" in all (4 occurrences).

Preface, thirteenth paragraph

Changed "wisely" to "well" in the fourth sentence.

Preface, second to last paragraph

"My target audience for this book is people who are looking for tools for solving given problems. In the first chapter, I seek to convince these people that all of the problems they face in life are part of the timeless problem of deciding how best to improve the process of deciding wisely. I go on to describe a strategy for improving this process. In the second chapter, I provide them with a conceptual framework — a toolkit — for applying this strategy to the problem of living well. In the third, I apply this toolkit to the problem of believing well. In the last chapter, I apply this toolkit to the problem of governing well."

was changed to:

"My target audience for this book is people who are looking for tools for solving given problems. In the first chapter, I seek to convince these people of the need to distinguish between the temporal concept of deciding well and the timeless concept of deciding well. I go on to describe a strategy for improving the timeless process of deciding well. In the second chapter, I apply the timeless concept of deciding well to the problem of living well. In the third, I apply this timeless concept to the problem of believing well. In the last chapter, I apply it to the problem of governing well."

Chapter 1, title

Changed the title from "Deciding Wisely" to "Deciding Well."

Chapter 1, Excellence in Means, first paragraph

Changed "modern (economic)" to "modern economic" in the second sentence.

Chapter 1, Excellence in Means, last paragraph

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"This lesson about the great value of learning-by-doing deserves a second example. In 1991, the Japanese began broadcasting analog high definition television. The same year, the Americans chose digital over analog for their standard. Although digital was much more costly, the Americans saw that the cost of digital was falling much faster. By considering what they were likely to learn, the Americans found a better problem to solve.⁴"

"4 For more on the subject of a learning worldview, see Appendix A."

was changed to the following footnote appended to the end of the second to last paragraph:

"⁴ This lesson about the great value of learning-by-doing deserves a second example. In 1991, the Japanese began broadcasting analog high definition television. The same year, the Americans chose digital over analog for their standard. Although digital was much more costly, the Americans saw that the cost of digital was falling much faster. By considering what they were likely to learn, the Americans found a better problem to solve. For more on the subject of learning, see Appendix A."

Chapter 1, Excellence in Living, last paragraph

"Excellence in Living

Economists commonly use the term 'rational' to describe people who satisfy their wants efficiently. In contrast, we commonly use the term 'wise' to describe people who are not only efficient in satisfying their wants but also wise in choosing them. Choosing an analog television standard in 1991 was "rational." Choosing a digital standard was wise.

"Choosing the right problem to solve is as important as choosing the right solution to a given problem. People who seek to live wisely divide the concept of *excellence in means* into two parts. The first is *effectiveness*, which they define as excellence in choosing subordinate ends. The second is *efficiency*, which they define as excellence in choosing means to subordinate ends. This pair of concepts helps them to divide the problem of how best to pursue their ultimate ends into easier to solve problems without losing sight of their ultimate ends.⁵

"We can apply this pair of concepts to the open-ended problem of how best to live well.⁶ This calls for distinguishing between timeless (normative) and temporal ends.⁷ Timeless ends are goals that concern processes. Temporal ends are goals that concern events. Playing basketball well is a timeless end. Winning a basketball game is a temporal end. The difference between a timeless end and a temporal end is the difference between heading in a direction and arriving at a destination.

"We can define *effectiveness in living* to be excellence in choosing temporal ends and *efficiency in living* to be excellence in choosing means to temporal ends. This pair of

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concepts helps us to divide the problem of how best to live well into temporal problems without losing sight of the timeless end of living well.

"We can use this insight to help us to live well. We do so by using timeless tools (concepts, models, etc.) to help us to identify what we are likely to need in our quest to live well and temporal tools to help us to make the most of what we have. We owe it to ourselves to plan our lives using timeless tools and work our plans using temporal ones. In military terms, timeless tools are strategic and temporal tools are tactical. We owe it to ourselves to plan our lives using strategic tools and work our plans using tactical ones."

"⁵ The distinction between managerial efficiency and effectiveness depends on the scale of the subordinate problem. What is a matter of efficiency at one problem scale is a matter of effectiveness at another. Imagine a hierarchical organization that defines the scale of subordinate problems in terms of each member's freedom to decide. What would be a matter of efficiency at a high level in the organization would be a matter of effectiveness at a lower level. *Failure to define a problem scale can cause great confusion*."

"⁶ Living well is the timeless end of living a fully human life. For more on what it is to live a fully human life, see Chapter 2 and Appendix B."

"7 Adler, Mortimer, Ten Philosophical Mistakes, (New York, Macmillan, 1985), 137."

was changed to:

"Understanding the difference between the RTS and EOQ concepts of excellence in means calls for understanding the difference between timeless (normative) and temporal ends.⁵ Timeless ends are goals that concern processes. Temporal ends are goals that concern events. Playing basketball well is a timeless end. Winning a basketball game is a temporal end. The difference between a timeless end and a temporal end is the difference between heading in a direction and arriving at a destination.

"The EOQ model aims at the temporal end is producing what we currently need to produce well. We base excellence in means on solely on what we currently know. Because we do not care about what happens in the future, we do not care about what we might learn by doing. This concept of excellence provides us with a finite problem that we can get our minds around, that is, a problem that is tractable, rational, and reasonable. Economists call people who act according to this concept of excellence "rational."

"In contrast, the RTS model aims at the timeless end of producing well. We base excellence in means on both what we know and what we may learn. Because we care about what happens in the future, we care about what we might learn by doing. This concept of excellence opens our eyes to the possibility of replacing non-knowledge

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resources with knowledge resources in the pursuit of timeless ends. We commonly call people who act according to this concept of excellence "wise."

"People who understand how best to act "wisely" divide the concept of *excellence in means* into two parts. The first is *effectiveness*, which they define as excellence in choosing temporal problems to solve. The second is *efficiency*, which they define as excellence in solving temporal problems. This pair of concepts helps them to divide infinitely large problems into finite problems well.⁶"

"5 Adler, Mortimer, Ten Philosophical Mistakes, (New York, Macmillan, 1985), 137."

"⁶ The distinction between managerial efficiency and effectiveness depends on the scale of the subordinate problem. What is a matter of efficiency at one problem scale is a matter of effectiveness at another. Imagine a hierarchical organization that defines the scale of subordinate problems in terms of each member's freedom to decide. What would be a matter of efficiency at a high level in the organization would be a matter of effectiveness at a lower level. *Failure to define a problem scale can cause great confusion*."

Chapter 1, A Timeless Model for Living Well, title

Changed "Living" to "Deciding."

Chapter 1, A Timeless Model for Deciding Well

"We seek to live well by deciding well. Ideally, deciding includes (1) finding a problem to solve; (2) formulating alternatives; (3) evaluating alternatives; (4) choosing an alternative; (5) implementing the chosen alternative; and (6) learning from the experience. Practically, we balance the costs and benefits of deciding. Most of our decisions are too small to justify all of these steps.

"From the timeless view, we find problems to solve using tools based on determining the truth about living well. This prevents us from being blinded to the possibility of learning, that is, the possibility of replacing knowledge for non-knowledge resources in living well. This is the essence of deciding *wisely* as opposed to deciding *rationally*.

"Deciding wisely as defined here does not mean that the process of deciding was perfect. It only means that we use timeless tools to help us to find problems to solve and temporal tools to help us solve chosen problems. We make mistakes. If we are wise, we learn from our mistakes. If we are wise, waste is a regrettable by-product of learning by doing.

"When we fail to decide perfectly, we embed mistakes into our markets, technologies, legal systems, languages, and cultures. The dot.com bubble, household lead paint, the Versailles Treaty, the concept of wealth as precious metal coins and bullion, and

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countless forms of conspicuous consumption spring to mind. We muddle through a tangle of past mistakes.

"We can escape many past mistakes and avoid many new ones by improving the factors of deciding wisely. Three of these factors are especially useful in knowledge economies. The first is the knowledge of how to decide wisely, which we commonly call practical wisdom. Practical wisdom includes both timeless tools to help us choose temporal ends and temporal tools to help us choose means to these ends. The second is trust, which includes trust in our predictions about what governments will do, hence the rule of law. The third is the freedom to decide wisely, which includes rights to property. In our quest to decide wisely, practical wisdom, trust, and freedom are strategic assets."

was changed to:

"The formal process of deciding consists of (1) finding a problem to solve; (2) formulating alternatives; (3) evaluating alternatives; (4) choosing an alternative; (5) implementing the chosen alternative; and (6) learning from the experience. Deciding well is a matter of performing these steps well, which includes balancing the cost and benefits of each step. Few decisions justify all of these steps.

"From the timeless view, deciding well is a matter of finding a problem to solve based on a timeless end. Deciding well does not mean that the process of deciding is perfect. We make mistakes. If we are wise, we learn from our mistakes. If we are wise, waste is a regrettable by-product of learning-by-doing.

"When we fail to decide perfectly, we embed mistakes into our markets, technologies, legal systems, languages, and cultures. The dot.com bubble, household lead paint, the Versailles Treaty, the concept of wealth as precious metal coins and bullion, and countless forms of conspicuous consumption spring to mind. We muddle through a tangle of past mistakes.

"We can escape many past mistakes and avoid many new ones by improving the factors of deciding well. Three of these factors are especially useful in knowledge economies. The first is the knowledge of how to decide well, which we commonly call practical wisdom. Practical wisdom includes both timeless tools to help us choose temporal ends and temporal tools to help us choose means to these ends. The second is trust, which includes trust in our predictions about what governments will do, hence the rule of law. The third is the freedom to decide well, which includes rights to property. In the timeless pursuit of deciding well, practical wisdom, trust, and freedom are strategic assets."

Chapter 2, title

Changed the title from "Timeless Concepts" to "Living Well."

Chapter 2, Introduction, first paragraph

"The first chapter explained how we can can make the most of what we know by planning our lives using timeless concepts and working our plans using temporal ones. This chapter puts forth timeless alternatives to the modern economic concepts of wealth, consumption, trade, production, and profit."

was changed to:

"In the first chapter, we distinguished between the temporal concept of deciding well and the timeless concept of deciding well. In this chapter, we apply the timeless concept of deciding well to the timeless problem of living well.

"Deciding to live well is a matter of using timeless tools (concepts, models, etc.) to help us to find temporal problems to solve and temporal tools to help us to solve these problems. We owe it to ourselves to plan our lives using timeless tools and work our plans using temporal ones. In military terms, we ought to plan our lives using strategic tools and work our plans using tactical ones.

"Modern economics provides us with the temporal tools we need to help us to solve given problems. The balance of this chapter provides us with timeless alternatives to the modern economic concepts of wealth, consumption, trade, production, and profit."

Chapter 2, Practical Wisdom, last paragraph

Changed "Acting wisely" to "Deciding well" in the last sentence.

Chapter 2, Two Means of Living Well, second paragraph

Changed "deciding wisely" to "living well" in the first sentence.

Chapter 2, Alternatives to Living Well, third paragraph

Changed "wisely" to "well" in the fourth sentence.

Chapter 2, Three Mistakes, second paragraph

Changed "wisely" to "well" in the first sentence.

Chapter 2, Production, first paragraph

Changed "deciding wisely" to "the timeless concept of deciding well" in the last sentence.

Chapter 2, Profit, first paragraph

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Changed "deciding wisely" to "the timeless concept of deciding well" in the second sentence.

Chapter 3, Refining Practical Stories, third paragraph, last two sentences

"As intelligent beings, we owe it to ourselves to use our intellect to live well, to live wisely. We live wisely by deciding wisely."

were changed to:

"As intelligent beings, we live well by deciding well."

Combined this with the fourth paragraph.

Chapter 3

Changed "deciding wisely" to "deciding well" in the entire chapter (31 occurrences).

Changed "decide wisely" to "decide well" in the entire chapter (10 occurrences).

Changed "live wisely" to "live well" in the entire chapter (3 occurrences).

Chapter 3, Introduction, first paragraph

"In the first chapter, we saw how the distinction between the timeless and the temporal can help us to live well. In this chapter, we will see how this distinction can help us to believe well."

was changed to:

"In the first two chapters, we saw how the concept of a timeless end can help us to pursue the timeless ends of deciding well and living well. In this chapter, we will see how this concept can help us to pursue the timeless end of believing well."

Chapter 3, Introduction, twelfth paragraph

Changed "deciding well" to "the timeless end of deciding well" in the second sentence.

Chapter 3, Introduction, thirteenth paragraph

Changed "deciding well" to "timeless end of deciding well" in the last sentence.

Chapter 3, Refining Practical Wisdom, second paragraph

Changed "acted wisely" to "decided well" in the first sentence.

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Changed "act wisely" to "decide well" in the last sentence.

Chapter 3, Refining Practical Wisdom, third paragraph

Changed "live" to "decide" in the first sentence.

Chapter 3, Refining Practical Stories, new fifth paragraph

Changed "If we accept the timeless concept of science as a process" to "From the timeless view" in the first sentence.

Chapter 3, Refining Practical Stories, new fifth paragraph, first sentence, footnote

Changed "wisely" to "well" in all (3 occurrences).

Added "For more on the subject of human needs, see Appendix B." at the end of the footnote.

Chapter 3, *Refining Practical Stories*, new sixth paragraph

Changed "owe it to ourselves" to "ought" in the first sentence.

Chapter 3, Refining Practical Stories, new seventh paragraph

Changed "owe it to ourselves" to "ought" in the first sentence.

Changed "deciding well is not the same thing as acting efficiently" to "acting efficiently is not the same thing as deciding well" in the third sentence.

Moved the last sentence to the end of the new eighth paragraph. Moved its footnote to the end of the second sentence in the new eighth paragraph.

Chapter 3, *Refining Practical Stories*, new eighth paragraph

Changed "deciding well and acting efficiently" to "acting efficiently and deciding well" in the first sentence.

Chapter 3, Refining Practical Stories, new ninth paragraph

"At first glance, this argument does nothing more than to return us back to our starting point of pursuing Justice by deciding wisely. It does much more than this. It tells us to weed out any story about Justice that is based on the concept of efficiency. Less obvious, it tells us to weed out any story about Justice based on any temporal concept. This includes any story based on sustaining a good society. Deciding well, which is to say revering life, is much more than sustaining a good society. Consider what our lives

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would be like today if all previous generations of humans aspired to nothing more than sustaining a good society. We are morally obliged to leave the caves of our ancestors."

was changed to:

"We ought to weed out any story about Justice based on any temporal concept of excellence in means. Further, we ought to weed out all other temporal stories about Justice. This includes all stories based on the temporal concept of sustaining a good society. Consider what our lives would be like today if all previous generations of humans aspired to nothing more than sustaining a good society. Deciding well calls for us to leave the caves of our ancestors."

Chapter 3, Deciding Well, title

Changed title to "Understanding Our Failures."

Chapter 3, Understanding Our Failures, first paragraph

"Deciding well is an ideal that we almost never achieve. It calls for us to choose our temporal end well and then choose the means to this end well. In other words, it calls for us to find the best problem to solve and then to solve this problem using the least costly resources."

was deleted.

Chapter 3, A Crude Look at the Whole, first paragraph

Changed "more wisely" to "better" in the first, second, and third sentences.

Chapter 4, Introduction, first paragraph

"The first chapter of this work introduced a strategy for learning to decide wisely. The second chapter introduced timeless concepts based on this strategy. The third chapter applied these intellectual tools to the problem of believing well. This chapter applies these tools to the problem of governing well."

was changed to:

"In the first three chapters, we saw how the concept of a timeless end can help us to pursue the timeless ends of deciding well, living well, and believing well. In this chapter, we will see how this concept can help us to pursue the timeless end of governing well."

Chapter 4, The Sovereign Story of Timeless Science, title

Changed the title to "The Timeless Sovereign Story."

Chapter 4, The Timeless Sovereign Story, second paragraph

"Timeless science provides us with a simple and straightforward answer to this question. Government ought to conform to timeless science. Government of, by, and for intelligent life ought to be based on the research program of, by, and for intelligent life."

was changed to:

"From the timeless view, the answer is simple and straightforward. Government of, by, and for intelligent life ought to be based on the research program of, by, and for intelligent life. The timeless end of governing well, which is to say the timeless end of pursuing Justice, is part of the timeless end of deciding well."

Chapter 4, *The Timeless Sovereign Story*, third paragraph

Changed "timeless science" to "the timeless end of deciding well" in the first sentence.

Changed "wisely" to "well" in the second and last sentences.

Chapter 4, The Timeless Sovereign Story, third paragraph, footnote

Changed "sovereign story of timeless science is simply a" to "timeless sovereign story is simply the" in the first sentence.

Changed "Timeless science" to "The timeless sovereign story" in the third sentence.

Chapter 4, The Timeless Sovereign Story, fourth paragraph

Changed "timeless ideal" to "timeless end of a good life for all" in the first sentence.

Chapter 4, Economic Policy, first paragraph

Changed "decision-oriented view of timeless science" to "timeless view" and "deciding wisely" to "deciding well" in the first sentence.

Changed deciding wisely" to "deciding well" in the second sentence.

Changed "governing free people wisely" to "governing free people well" in the last sentence.

Chapter 4, Control the Money Supply Passively, third paragraph

Changed "wisely" to "well" in the first and fifth sentences.

Chapter 4, Promote Practical Wisdom, third paragraph

Changed "wisely" to "well" in the first sentence.

Changed "wisely" to "even better" in the third sentence.

Chapter 4, Promote Savings for Welfare, first paragraph

Changed "wisely" to "well" in the first sentence.

Chapter 4, Promote Savings for Welfare, second paragraph

Changed "wisely" to "well" in the first, second, and fourth sentences.

Changed "wisely" to "better" in the last sentence.

Chapter 4, Promote Savings for Welfare, third paragraph

Changed "wisely" to "well" in all (4 occurrences).

Chapter 4, Promote Savings for Welfare, last paragraph

Changed "wisely" to "better" in the last sentence.

Chapter 4, Choosing Governments, first paragraph

Changed "Governing" to "From the timeless view, governing" and "deciding wisely" to "deciding well" in the first sentence.

Afterword, first paragraph

Changed "wisely" to "well" in the third and fourth sentences.

Afterword, second paragraph

Changed "wisely" to "well" in the first sentence.

Appendix A, title

Changed the title from "A Learning Worldview" to "Learning Well."

Appendix A, first paragraph

Changed "a learning worldview" to "a timeless view of learning" in the last sentence.

Appendix A, second paragraph

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Changed "a learning worldview" to "a timeless view of learning" in the first sentence.

Changed "learning point of view" to "timeless view" and "non-learning one" to "temporal one" in the second sentence.

Appendix B, title

Changed the title from "Reverence for Life" to "Revering Life Well."

Appendix B, Human Needs, last paragraph

Changed "wisely" to "rightly" in the last sentence.

Appendix B, *Schweitzer's Universal Spiritual Need*, fourth paragraph, second sentence, footnote

Changed "living wisely" to "deciding well" in the last sentence.

Appendix B, *Heroic Death*, second paragraph

Changed "wisely" to "well" in the first sentence.

Appendix B, Conclusion, first paragraph

Changed "living wisely" to "deciding well" in the fourth and seventh sentences.

Appendix B, Conclusion, first paragraph

Changed "revering life" to "revering life well" in the last sentence.

Appendix C, title

Changed the title from "Ever Leaner Production" to "Producing Well."

Appendix C, A Finer Timeless Model, first paragraph

Changed "Producing wisely" to "The timeless process of producing well" in the first sentence.

Appendix C, Smoothing Flows, third paragraph

Changed "Satisfying customers ever more wisely" to "Satisfying customer needs ever better" in the first sentence.

Appendix C, Temporal Details, first paragraph

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Changed "produce wisely" to "producing well, which is to say ever more leanly," in the first sentence.

Appendix C, *Machine Tools*, second paragraph

Changed "timeless end is efficient production" to "goal is *efficient* production" in the second sentence.

Changed "timeless end is wise production" to "goal is *wise* (efficient and effective) production" in the fourth sentence.

Appendix C, Summary, first paragraph, first two sentences

"Traditional production systems aim at producing efficiently. The Toyota system aims at producing ever more wisely."

was changed to:

"Modern production systems aim at the temporal end of producing well. The Toyota system aims at the timeless end of producing well."

Changed "ever more wisely" to "wisely, which is to say ever more leanly" in the second sentence.

Appendix D, title

Changed the title from "National Income Accounting" to "Accounting Well."

Appendix D, second paragraph

Changed "living wisely" to "living well" in the first and third sentences.

Changes in Version 2008.01.31

Chapter 1, A Timeless Model for Deciding Well, third paragraph

Changed "embed mistakes" to "embed mistakes into our stocks of knowledge in use, that is," in the first sentence.

Chapter 2, Introduction, first paragraph

Changed "timeless problem" to "timeless end" in the last sentence.

Chapter 2, Consumption, first paragraph

Changed "people who make the best use of what they know" to "deciding well" in the third sentence.

Chapter 2, Production, first paragraph

"As the RTS example showed, production processes produce both products for sale and knowledge of how to build products for sale. Producing well calls for the timeless concept of deciding well."

was changed to:

"As the RTS example showed, producing well calls for learning-by-doing. Production processes ought to produce both products for sale and knowledge of how better to build products for sale."

Chapter 2, Profit, first paragraph

"Profit is the expected return on knowledge of how to decide well.⁵ Deciding well calls for the timeless concept of deciding well. We owe it to ourselves to be entrepreneurs in the business of life."

was changed to:

"Timeless profit is the expected return on practical wisdom, the knowledge of how to decide well.⁵ From the timeless view, the business of life is living well. We live well by deciding well. Deciding well calls for learning-by-doing. We ought to be entrepreneurs in the business of life."

Chapter 2, Profit, first paragraph, footnote

Changed "timeless concept" to "timeless concept of profit" in the first sentence.

Chapter 3, Introduction, all

Changed "transcendent" to "unbounded" in all (11 occurrences). Changed "a" to "an" where appropriate.

Chapter 3, Introduction, fourth paragraph, footnote

Changed "statement" to "belief" in the third sentence.

Chapter 3, Introduction, ninth paragraph

Changed "practical problem" to "temporal problem" in the first sentence.

Chapter 3, Introduction, sixteenth paragraph

Changed "this timeless end of a good life for all" to "this timeless end" in the last sentence.

Chapter 3, Introduction, last paragraph

Changed "knowledge" to "useful knowledge" in the last sentence.

Chapter 3, The Elephant in the Room, first paragraph, end

Added the sentence:

"In philosophical terms, it concerns the relation between transcendent factors and transcendental values."

Chapter 3, Refining Everyday Thinking, seventh paragraph, first footnote

Added the phrase "at helping us to find problems to solve" to the end of the last sentence.

Chapter 3, Refining Practical Wisdom, first paragraph

"The need for this timeless concept of science is especially pressing in the field of economics. We predict what happens in economies based on the knowledge that economic agents use. If we explain what happens in economies based on the knowledge that economic agents use, we will tend to blind ourselves to the possibility of learning. To avoid this, we need to explain what happens in economies based on how we should act if we had greater knowledge of what it is that we ought to do."

was deleted

Chapter 3, Refining Practical Wisdom, new first paragraph, end

Added the sentence: "Failing to do so will tend to blind us to the possibility of learning."

Chapter 3, Refining Practical Stories, second paragraph, last sentence

Changed "owe it to ourselves" to "ought" in the first sentence.

Chapter 3, *Refining Practical Stories*, second paragraph

Changed "owe it to ourselves" to "ought" in the first sentence.

Changed the last sentence from italics to normal.

Chapter 3, Refining Practical Stories, sixth paragraph

Changed "pursue the Good" to "decide well" in the last sentence.

Chapter 3, Refining Practical Stories, eighth paragraph, footnote

Changed "state of affairs" to "state of the world" in the first sentence.

Chapter 3, Recursive Failures, first paragraph, footnote

Changed "both the truth and the good" to "the unbounded factors of deciding well" in the first sentence.

Chapter 3, A Tale of Two Revolutions, last paragraph

Changed "economic science" to "economics" in the last sentence.

Chapter 4, Sovereignty, last paragraph

Changed "claims of goodness" to "claims" in the first, second, and last sentences.

Chapter 4, The Explicit Experiment, second paragraph

Changed "In effect, Franklin was stating," to "From the timeless view, this sovereign rights story reads," in the last sentence.

Chapter 4, The Timeless Sovereign Story, second paragraph

Changed "If not" to "If it is not wise to protect these beliefs" in the second sentence.

Chapter 4, The Timeless Sovereign Story, third paragraph

"From the timeless view, the answer is simple and straightforward. Government of, by, and for intelligent life ought to be based on the research program of, by, and for intelligent life. The timeless end of governing well, which is to say the timeless end of pursuing Justice, is part of the timeless end of deciding well."

was deleted.

Chapter 4, The Timeless Sovereign Story, new third paragraph

Changed "simple" to "simple and straightforward" in the second sentence.

Chapter 4, Judge Interventions, second paragraph

Changed "producers" to "local farmers" in the sixth sentence.

Chapter 4, Promote Savings for Welfare, first paragraph

"If we were perfectly wise, there would be no need for governments to force us to decide well. Regrettably, we are not perfectly wise. Some of us earn our incomes helping others to decide foolishly. All of us spend at least some of our incomes foolishly. None of us is perfectly wise."

was deleted.

Chapter 4, Promote Savings for Welfare

Changed "to learn to decide well" to "decide well" in all (7 occurrences).

Chapter 4, Promote Savings for Welfare, last paragraph

Changed "progressive" to "highly progressive" in the first sentence.

Changed "acquire practical wisdom" to "decide well" in the second sentence.

Changed "learn to decide better" to "decide well" in the last sentence.

Added the following footnote to the end of the last sentence:

"¹⁶ From the timeless view of deciding well, we owe a debt to those who created the knowledge that we use at no cost. From the temporal view of modern economics, our interest in how others choose to live is external to the problem of how best to allocate scarce resources. The modern economic solution to this externality problem involves making all information about how we choose to live our lives freely available to everyone else. Compared to the loss of all privacy, a universal welfare savings plan and highly progressive taxation does not look so onerous."

Appendix A, first paragraph

Changed "learning" to "deciding well" in the last sentence.

Appendix A, second paragraph

Changed "learning" to "deciding well" in the first sentence.

Changes in Version 2008.02.02

Preface, first paragraph

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Changed "twenty-nine" to "thirty" in the first sentence.

Preface, second paragraph

Changed "just as the economic order quantity (EOQ) model would later lead me astray by blinding me to the possibility of learning" to "by boxing me in assumptions" in the fourth sentence.

Preface, third paragraph

Changed "a means of defining practical wisdom" to "such a means" in the last sentence.

Preface, fifth paragraph

Changed "all three concepts are synonyms for" to "these three concepts mean the same thing, which is" in the second sentence.

Changed "greater" to "infinitely greater" in the third sentence.

Changed "fully human lives" to "well" in the last sentence.

Added the sentence: "We ought to distinguish between theology, religion, and faith."

Preface, sixth paragraph

Deleted ", including scientific ones," in the second sentence.

Preface, eighth paragraph

"We solve infinitely large problems by finding processes that, when applied recursively (repeatedly with the output of one cycle becoming the input of the next cycle), move us ever closer to the solution. To solve the problem of determining the number pi, we find processes that, when applied recursively, move us ever closer to determining pi. To solve the infinitely large problem of refining our beliefs, we find processes that, when applied recursively, move us ever closer to determining the truth."

was changed to:

"We can solve infinitely large problems by finding recursive processes that move us ever closer to the solution. A recursive process is a finite process that we apply repeatedly so that the results of one cycle become the conditions for the next. To solve the problem of determining the transcendental number pi, we find a recursive process that moves us ever closer to determining pi. Similarly, to solve the infinitely large

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problem of refining our beliefs, we find a recursive processes that moves us ever closer to determining the truth."

Preface, ninth paragraph

Changed "move" to "can move" in the first sentence.

Changed "process" to "recursive process" in the second sentence.

Preface, tenth paragraph, second sentence

"In making this claim, they confuse the tactical problem of seeking the truth given what we currently know and the tactical problem of seeking the good given what we currently know with the strategic problem of seeking both the truth and the good."

was changed to:

"In making this claim, they confuse the temporal problem of seeking the truth and the temporal problem of seeking the good with the timeless problem of seeking both the truth and the good."

Preface, last paragraph

Deleted "concept of deciding well" in the second sentence (2 occurrences).

Changed "the temporal and the timeless" to "temporal and timeless tools" in the second sentence.

Chapter 1, Excellence in Means, third paragraph, first two sentences

"Whether those who use the EOQ model recognize it or not, they assume that we do not learn through experience. This assumption tends to be self-fulfilling."

was changed to:

"The assumption that we do not learn through experience tends to be self-fulfilling."

Chapter 1, Excellence in Means, fourth paragraph

Changed "an expected learning curve, a mathematical function" to "a mathematical function" in the first sentence.

Added the following footnote to the fourth sentence:

"⁴ Engineers and economists call this mathematical function an expected learning curve. They typically assume that doubling experience drops the cost per unit by some

fixed percentage. The greater a team's ability to learn, the greater this percentage ought to be."

Chapter 1, Excellence in Means, fifth paragraph

Changed "short setup times call for much smaller investments" to "short setups yield savings" in the third sentence.

Changed "short setup times" to "short setups" in the fourth sentence.

Chapter 1, Excellence in Means, eighth paragraph

Changed "This" to "The Toyota" and "processes" to "production processes" in the first sentence.

Chapter 1, Excellence in Means, last paragraph

"People who understand how best to act "wisely" divide the concept of *excellence in means* into two parts. The first is *effectiveness*, which they define as excellence in choosing temporal problems to solve. The second is *efficiency*, which they define as excellence in solving temporal problems. This pair of concepts helps the "wise" to divide infinitely large problems into finite problems well.""

was moved to the third paragraph of the next section and changed to:

"We decide well by dividing the concept of *excellence in means* into two parts. The first is *effectiveness*, which we define as excellence in choosing temporal problems to solve. The second is *efficiency*, which we define as excellence in solving temporal problems. This pair of concepts helps us to find and solve problems well."

Chapter 1, A Timeless Model of Deciding Well, title

Changed title to "Two Views of Deciding Well."

Chapter 1, Two Views of Deciding Well, first two paragraphs

"The formal process of deciding consists of (1) finding a problem to solve; (2) formulating alternatives; (3) evaluating alternatives; (4) choosing an alternative; (5) implementing the chosen alternative; and (6) learning from the experience. Deciding well is a matter of performing these steps well, which includes balancing the cost and benefits of each step. Few decisions justify all of these steps.

"From the timeless view, deciding well is a matter of finding a problem to solve based on a timeless end. Deciding well does not mean that the process of deciding is perfect. We make mistakes. If we are wise, we learn from our mistakes. If we are wise, waste is a regrettable by-product of learning-by-doing."

were changed to:

"From the temporal view, the formal process of deciding consists of (1) formulating alternatives; (2) evaluating alternatives; (3) choosing an alternative; and (4) implementing the chosen alternative. The process of deciding well is a matter of performing these formal steps well, which includes balancing the cost and benefits of each step. Few decisions justify all of these formal steps.

"From the timeless view, the formal process of deciding is ever-repeating cycle of (1) finding a problem to solve based on the timeless end; (2) formulating alternatives; (3) evaluating alternatives; (4) choosing an alternative; (5) implementing the chosen alternative; and (6) learning from the experience. The process of deciding well is a matter of performing these formal steps well, which includes balancing the cost and benefits of each step. Few decisions justify all of these formal steps. To decide well is not to decide perfectly. We make mistakes. We learn from our mistakes. Waste is a regrettable by-product of learning-by-doing."

Chapter 2, Introduction, first paragraph

"In the first chapter, we distinguished between the temporal concept of deciding well and the timeless concept of deciding well. In this chapter, we apply the timeless concept of deciding well to the timeless end of living well."

was changed to:

"In the first chapter, we saw how the timeless concept of deciding well can help us to pursue the timeless end of deciding well. In this chapter, we will see how this concept can help us to pursue the timeless end of living well."

Chapter 2, Human Capital, Work, and Leisure, second paragraph

Changed "timeless view" to "timeless view of living well" in the first sentence.

Chapter 3, Introduction, first paragraph

Changed "concept of a timeless end" to "timeless concept of deciding well" in the first sentence.

Chapter 3, Introduction, third paragraph

Changed "established empirical facts may be overturned by a single unexpected event" to "unexpected events may overturn established empirical facts" in the first sentence.

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Changed "new birds were reclassified into the genus *atratus* did the Europeans need" to "the Europeans reclassified the new birds into the genus *atratus* that they needed" in the first sentence.

Chapter 3, Introduction, eighth paragraph

Changed "timeless view" to "timeless view of deciding well" in the first sentence.

Chapter 3, Refining Practical Stories, fifth paragraph

Changed "timeless view" to "timeless view of deciding well" in the first sentence.

Chapter 4, Introduction, first paragraph

Changed " concept of a timeless end" to "timeless concept of deciding well" in the first sentence.

Chapter 4, Sovereignty, third paragraph

Deleted the second sentence: "This belief arises from the beliefs that the basis for the rights is good and that the rights will be exercised well."

Changed "sovereign, that is, with the general beliefs that the basis for the rights is good and that the rights will be exercised well" was changed to: "holder of the sovereign rights" in the last sentence.

Chapter 4, The Timeless Sovereign Story, title

Changed the title to "The Sovereign Story of Deciding Well."

Chapter 4, The Timeless Sovereign Story, second paragraph, footnote

Changed "timeless sovereign story" to "sovereign story of deciding well" in the first and second sentences.

Chapter 4, The Explicit Experiment, second paragraph

Changed "timeless view" to "timeless view of deciding well" in the fifth sentence.

Chapter 4, Economic Policy, first paragraph

Changed "timeless view" to "timeless view of deciding well" in the first sentence.

Chapter 4, Control the Money Supply Passively, first paragraph

Changed "learn how to decide" to "decide" in the first sentence.

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Changed "learning how to deciding" to "deciding" in the fifth sentence.

Chapter 4, Promote Practical Wisdom, first paragraph

Changed "even better" back to "better" in the third sentence.

Chapter 4, Choosing Governments, first paragraph

Changed "unfair" back to "unjust" in the third sentence.

Afterword, second paragraph

Deleted "("a God's eye view of the Universe")" from the last sentence.

Afterword, third paragraph

"I also believe that progress creates stress. A government that seeks to protect its people from stress by retarding progress is unfair to its people, other societies, future generations, and other species. All who seek to limit freedom in order to reduce stress ought to remember Benjamin Franklin's rebuke that those who would give up essential liberty to purchase a little temporary safety deserve neither liberty nor safety."

was changed to:

"I also believe that progress creates stress. A government that seeks to protect its people from stress by retarding progress is unjust. It robs its people, other people, and other species of a better future. All who seek to limit freedom in order to reduce stress ought to remember Benjamin Franklin's rebuke to those who would give up essential liberty to purchase a little temporary safety — they deserve neither liberty nor safety."

Appendix A, second paragraph

Changed "a timeless view" to "the timeless view of deciding well" in the third sentence.

Changed "a temporal one" to "the temporal view of modern economics" in the third sentence.

Changes in Version 2008.02.05

Entire document

Changed "timeless process" to "endless process" in all (4 occurrences).

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Acknowledgments, last paragraph

Changed "critiqued" to "reviewed" in the first sentence.

Preface, fifth paragraph

Changed "a fully human life" to "well" in the third sentence.

Changed "transcendent" to "transcendental" in the fifth sentence.

Preface, sixth paragraph

Changed ": what" to ". What" in the first sentence.

Changed "transcendent" to "transcendental" in the fifth sentence.

Preface, twelfth paragraph, last sentence

"They then use the right tools for the right job."

was deleted.

Preface, last paragraph

Changed "problem" to "timeless end" in the fourth, fifth, and last sentences.

Chapter 1, Excellence in Means, third paragraph, first sentence

"The assumption that we do not learn through experience tends to be self-fulfilling."

was changed to:

"The EOQ model contains the hidden assumption that we do not learn through experience. This assumption tends to be self-fulfilling."

Chapter 1, Excellence in Means, third paragraph

Changed "learning how to set up tools ever more quickly" to "learning" in the third sentence.

Chapter 1, Excellence in Means, fifth paragraph

Changed "the car industry" to "through industry" in the last sentence.

Chapter 1, Excellence in Means, eighth paragraph

Changed "Tightening" to "Slowly tightening" in the third sentence.

Chapter 1, Excellence in Means, second to last paragraph

Changed "get our minds around, that is, one that is tractable, rational, and reasonable" to "solve" in the fourth sentence.

Changed "according to this concept of excellence" to "in this way" in the last sentence.

Chapter 1, Excellence in Means, last paragraph

Changed "according to this concept of excellence" to "in this way" in the last sentence.

Chapter 3, Introduction, seventh paragraph, footnote

Changed "who confuse the religious with the theistic, this convention appears" to "this convention may appear" in the first sentence.

Chapter 3, Introduction, second to last paragraph

Changed "imperative" to "rule" and "debt that we owe to those from whom we have learned" to "debts we cannot pay to those due" in the first sentence.

Added the sentence "This includes the debts that we owe to those who provided us with the knowledge that we use freely."

Chapter 3, The Ring of Truth, fourth paragraph, footnote, second two sentences

Changed "An activity that is too easy" to "Too easy an activity" and "an activity that is too hard" to "too hard an activity" in the second sentence.

Changed "an object that is too easy" to "too easy an object" and "an object that is too hard" to "too hard an object" in the second sentence.

Chapter 3, The Ring of Truth, last paragraph, footnote, second two sentences

"At issue is not the belief that that tastes tend to remain stable over time, which is useful in making predictions about how people will act, but rather the belief that tastes ought to remain stable over time. From the temporal view of logical positivism, this distinction is the difference between a positive statement and a normative one."

were changed to:

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"At issue is not the belief that that tastes tend to remain stable over time, but rather the belief that tastes ought to remain stable over time."

Chapter 3, Refining Everyday Thinking, ninth paragraph

Changed "the caves of our ancestors" to "our ancestral caves" in the last sentence.

Chapter 3, Refining Everyday Thinking, last paragraph

Added the sentence "Fixing this modern scheme of grouping disciplines takes three simple steps."

Changed "step towards fixing this modern, temporal scheme would be" to "is" in the new second sentence.

Changed "would be" to "is" in the new fourth sentence.

Changed "would be" to "is" in the new sixth sentence.

Changed "academic disciplines" to "disciplines" in the last sentence.

Chapter 3, Refining Practical Stories, seventh paragraph

Changed "acting efficiently is not the same thing as deciding well" to "deciding well is not the same thing as acting efficiently" in the last sentence.

Chapter 3, Refining Practical Stories, eighth paragraph

Changed "the difference between acting efficiently and deciding wisely" to "this difference" in the first sentence.

Changed "ideal temporal state of the world" to "state of the world" in the second sentence.

Changed "debt that we owe to those from whom we have learned" to "debts that we owe to those who provided us with the knowledge that we use freely" in the second sentence.

Chapter 3, Recursive Failures, second paragraph

Changed "least costly" to "best" in the fourth sentence.

Changed "ideal means of living well" to "ideal means" in the fifth sentence.

Changed "ideal means" to "means" in the last sentence.

Chapter 3, A Crude Look at the Whole, last paragraph, footnote

Changed "This" to "The" in the first sentence.

Appended this footnote to the footnote at the end of the last paragraph of Computer Models.

Chapter 4, The Explicit Experiment, second paragraph

Changed "it was Benjamin Franklin who" to "Benjamin Franklin" in the third sentence.

Chapter 4, The Explicit Experiment, fourth paragraph

Changed passive voice to active voice in the fifth sentence.

Deleted the second sentence in the footnote: "It is commonly known as the Gettysburg Address."

Chapter 4, The Explicit Experiment, last paragraph

"Both of these groups of true believers want the government to promote their beliefs about the good rather than allow these beliefs to succeed or fail in the marketplace of ideas, which is to say that both want their beliefs about the good to be held as selfevident truths. True believers in socialism want the government to administer social justice; true believers in theism want government to administer theistic justice. In effect, both groups of true believers want their means of linking or relinking with something greater than ourselves to be the state religion."

was changed to:

"Both of these groups of true believers want the government to act according to their beliefs about the good. True believers in socialism want the government to administer social justice; true believers in theism want government to administer theistic justice. In effect, both groups want their means of linking or relinking with something greater than ourselves to be the state religion."

Changed "late 1917" to "1920" in the fourth sentence of the footnote. (Passage in Senate versus effective date issue.)

Changed "this amendment not been repealed in late" to "the voters not repealed this amendment in" in the last sentence of the footnote.

Chapter 4, The Sovereign Story of Deciding Well, first paragraph

Changed "can be tested" to "we can test" in the second sentence.

Afterword, first paragraph

Changed "nine" to "ten" in the first sentence.

Appendix A, first paragraph

Changed "timeless view of deciding well" back to "timeless view" in the last sentence.

Appendix A, second paragraph

Changed "timeless view of deciding well" back to "timeless view" in the third sentence.

Changed "temporal view of modern economics" back to "temporal one" in the third sentence.

Appendix B, The Practical Benefits of Mystical Oneness, title

Changed "Mystical Oneness" to "Magical Mysticism" in the title.

Appendix B, The Practical Benefits of Magical Mysticism, first paragraph

"Schweitzer embraced the practical benefit of ethical mysticism, which is its ability to promote the universal moral rule (Kantian categorical imperative) of revering life. Unlike modern economics, this rule addresses the problem of what we owe to the people who created the knowledge that we use freely. According to this rule, the debt that we owe to those who helped us, including those who provided us with the useful knowledge that we use freely, we pay to others by revering life. In theory, this universal moral rule should aid the research program of, by, and for intelligent life better than any other universal moral rule."

was changed to:

"Schweitzer embraced the practical benefit of ethical mysticism, which is its ability to promote reverence for life. However, he ignored the practical benefits of magical mysticism."

Appendix B, The Practical Benefits of Magical Mysticism, second paragraph, first sentence

"Schweitzer ignored the practical benefits of magical mysticism."

was deleted.

Appendix B, The Practical Benefits of Magical Mysticism, eighth paragraph

Changed "produces the illusion of being magically transported" to "seems to transport us" in the second to last sentence.

Changes in Version 2008.02.07

Chapter 1, Excellence in Means, eleventh paragraph

Changed "Economists" to "Modern economists" in the last sentence.

Chapter 3, Introduction, fifteenth paragraph

Changed "In thinking through theory" to "However" in the fourth sentence.

Chapter 3, The Ring of Truth, second paragraph, last three sentences

"This ancient belief is not consistent with the modern belief that beauty is the quality of objects whose contemplation yields pleasure, much less with the modern belief that beauty is in the eye of the beholder. However, it is consistent with the timeless definitions of pleasure (pleasure-in-acting) and joy (pleasure-in-being) put forth in the second chapter. From the timeless view, *beauty is the defining quality of objects whose contemplation yields not only pleasure but also the joy that comes from improving our belief system.*"

were changed to:

"This belief is consistent with the timeless definitions of pleasure (pleasure-in-acting) and joy (pleasure-in-being) put forth in the second chapter: *beauty is the defining quality of objects whose contemplation yields not only pleasure but also the joy that comes from improving our belief system.*"

Chapter 3, The Ring of Truth, second to last paragraph

Changed "governs" to "colors" in the last sentence.

Chapter 3, The Ring of Truth, last paragraph

Changed "find the Good" to "perceive the Truth" in the second sentence.

Changed "help us to decide well" to "enlighten us" in the last sentence.

Chapter 3, A Tale of Two Revolutions, last paragraph

Changed "science of practical wisdom" to "premier practical science" in the last sentence.

Changes in Version 2008.02.12

Preface, third paragraph

Changed "is the pursuit of" to "is the pursuit of" in the third sentence.

Preface, eighth paragraph

Changed "timeless view of deciding well" and "timeless view of believing well" in the first sentence.

Preface, tenth paragraph

Deleted "(philosophy and science)" and "(ethics, politics, and economics)" in the first sentence.

Changed "They" and "In failing to take the infinitely long view, they" in the last sentence.

Preface, twelve paragraph

Changed "practical wisdom" and "practical wisdom well" in the second sentence.

Chapter 1, Excellence in Means, ninth paragraph, footnote, end

Added the sentence: "For more on the Toyota production system, see Appendix C."

Chapter 2, Production, first paragraph

Changed "products for sale" to "products" in the last sentence (two occurrences).

Chapter 3, Introduction, third paragraph

Changed "Hume's" to "the" in the first sentence.

Chapter 3, Introduction, fourth paragraph

Changed "Under this genus" to "Hence" in the fifth sentence.

Chapter 3, Introduction, fifth paragraph

Changed "extraordinary" to "revolutionary" in the second sentence.

Chapter 3, Introduction, fifteenth paragraph

Changed "Hume's" to "the" in the fifth sentence.

Chapter 3, Introduction, second to last paragraph

Changed "revering life" to "deciding well" in the third sentence.

Chapter 3, The Ring of Truth, last paragraph

Changed "It" to "Art" in the last sentence.

Chapter 3, *The Elephant in the Room*, second paragraph

Changed "is" to "is even more" in the first sentence.

Deleted the last two sentences: "In doing so, we deify the Truth and demonize the ignorance that hinders us. The devil lies in the temporal details."

Moved paragraph to the third paragraph.

Chapter 3, The Elephant in the Room, new second paragraph

Changed "is nearly as" to "is" in the first sentence.

Added the sentence: "Deciding well and our understanding of deciding well coevolve."

Chapter 4, The Explicit Experiment, second paragraph

Changed "simple substitution" to "small edit" in the fourth sentence.

Changed "deciding well" to "timeless science" in the fifth sentence.

Chapter 4, *The Explicit Experiment*, fourth paragraph

Changed "free speech during the First World War" to "free speech" in the last sentence.

Chapter 4, Lower Trade Barriers, first paragraph

Changed "a wise vision of what we owe it to ourselves to do" to "the timeless concept of deciding well" in the third sentence.

Changed "wisdom" to "practical wisdom" in the third and fourth sentences.

Appendix A, first two paragraphs

Merged first two paragraphs.

Appendix B, Balanced Excellence, first paragraph

Changed "Mystics of many faiths believe" to "Many dualistic religions claim" in the first sentence.

Changed "They believe that a good life must include the temporal end of" to "In short, a good life must include" in the last sentence.

Appendix B, Balanced Excellence, second paragraph

Changed "reverence for life" to "revering life well" in the first sentence.

Changed "one another" to "each other" in the second sentence.

Appendix B, Balanced Excellence, last paragraph

Changed "of pursuing" to "to" in the first sentence.

Changed "to economize on" to "in order to conserve" in the first sentence.

Changed "that serve to check" to "to check" in the second sentence.

Appendix B, *Atheism*, first paragraph

Changed "whole truth" to "Truth" in the last sentence.

Appendix B, *Atheism*, last paragraph

Changed "owe it to themselves" to "ought" in the first sentence.

Appendix B, *Atheism*, last paragraph

Changed "owe it to themselves" to "ought" in the first sentence.

Changes in Version 2008.02.14

Preface, second to last paragraph, end

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Added the sentence: "To change the way that people decide is to change the way that they choose to live, choose to believe, and choose to govern and be governed."

Chapter 3, The Ring of Truth, last paragraph, last sentence

"Art ought to enlighten us."

was changed back to:

"It ought to help us to decide well."

Changes in Version 2008.02.16

Preface, third paragraph

Changed "scientists" to "we" in the second sentence.

Deleted the last sentence: "Because it is possible to define such a means, there can be a science of practical wisdom."

Chapter 1, Excellence in Means, fifth paragraph

Changed "wise" to "best" in the first sentence.

Chapter 1, Two Views of Deciding Well, fourth paragraph

Added "scientific theories," to the first sentence.

Added "the Ptolemaic theory of the solar system," to the second sentence.

Chapter 2, Practical Wisdom, first paragraph

Changed "a good life" to "well" in the last sentence.

Chapter 3, Introduction, fifteen paragraph

Changed "wisely" to "well" in the first sentence.

Chapter 3, Refining Everyday Thinking, seventh paragraph, second sentence, footnote

"¹⁶ To confuse a scientific theory with the whole truth is to make the philosophical mistake of confirming the consequent. Formally, (1) if A is true, B is true; (2) B is

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true; therefore (3) A is true. For example, (1) if it rains, the ground is wet; (2) the ground is wet; therefore, (3) it rained. This bit of foolishness ignores dew, sprinkler systems, melting snow, and countless other things that make the ground wet. Testing the consequences of a theory does not test its assumptions."

was deleted.

Chapter 3, Refining Practical Stories, ninth paragraph

Changed "our ancestral caves" to "caves of our ancestors" in the last sentence.

Chapter 3, Understanding Our Failures, first paragraph

Changed "wise decision-making" to "deciding well" in the fifth sentence.

Afterword, first paragraph, last sentence

"I oppose people who (1) seek to use the power of the state to impose their plans on others; (2) seek to gain government favors that retard progress; (3) seek to maintain the current state of the world for its own sake; and (4) consider freedom to be an end in itself rather than a key factor in deciding well."

was deleted.

Afterword, second paragraph

Changed "wiser" to "better" in the fifth sentence.

Appendix B, Introduction, first paragraph

Changed "a good life" to "well" in the last sentence.

Appendix B, Human Needs, first paragraph

Changed "a good life" to "well" in the second and third sentences.

Appendix B, Human Needs, second paragraph

Changed "a good life is a life spent" to "living well is living" in the second and third sentences.

Appendix B, Balanced Excellence, first paragraph

Changed "good life" to "life lived well" in the last sentence.

Appendix D, first paragraph

Changed "wiser" to "decide better" in the first sentence.

Changes in Version 2008.02.18

Entire Document

Checked and updated dates on Internet references (6 occurrences).

Preface, twelfth paragraph

"Most people decide based on what they know. In contrast, people who pursue practical wisdom well decide not only based on what they know but also on what they need to learn in order to decide ever better. They embrace their ignorance. To embrace their ignorance well, they distinguish between the intellectual tools that they use to find problems to solve and the intellectual tools that they use to solve given problems. In philosophical terms, they distinguish between the timeless and the temporal. In military terms, they distinguish between the strategic and the tactical. In scientific terms, they distinguish between explanations and predictions. In economic terms, they distinguish between effectiveness and efficiency."

was deleted.

Preface, new twelfth paragraph

Changed "tools" to "ends" in the second sentence.

Changed "describe a strategy for improving the endless process of" to "apply this distinction to" in the third sentence.

Chapter 1, Excellence in Means, fifth paragraph

Changed "scrap far fewer" to "need to scrap fewer" in the fifth sentence.

Chapter 1, Two Views of Deciding Well, last paragraph

"We can escape many past mistakes and avoid many new ones by improving the factors of deciding well. Three of these factors are especially useful in knowledge economies. The first is the knowledge of how to decide well, which we commonly call practical wisdom. Practical wisdom includes both timeless tools to help us choose temporal ends and temporal tools to help us choose means to these ends. The second is trust, which includes trust in our predictions about what governments will do, hence the rule of law. The third is the freedom to decide well, which includes rights to property. In the endless pursuit of deciding well, practical wisdom, trust, and freedom are strategic assets."

was deleted.

Chapter 2, Profit, first paragraph

Changed "Timeless profit" to "Profit" and "wisdom, the knowledge of how to decide well" to "wisdom" in the first sentence.

Deleted the second sentence "From the timeless view, the business of life is living well."

Deleted the new third sentence "Deciding well calls for learning-by-doing."

Chapter 3, Introduction, twelfth paragraph

"Consider the three factors listed at the end of the first chapter. Of these, only practical wisdom is an unbounded factor. We can never have too much knowledge of how to decide well. Freedom and trust are not unbounded factors."

were changed to:

"The Good, the Truth, and Practical Wisdom are unbounded factors of deciding well. We need the Good to avoid deprivation, which hinders deciding well. We need the Truth to avoid ignorance, which also hinders deciding well. Practical Wisdom is knowledge of how to decide well. We can never have too much knowledge of how to decide well. In contrast, freedom and trust are bounded factors."

Chapter 3, Introduction, thirteen and fourteenth paragraphs

"The second step is accepting the proposition that the process of deciding well is the same for all timeless ends that are unbounded factors of deciding well. This curious property arises from the self-similar nature of the timeless end of deciding well.

"The third step is to recognize that the endless pursuits of all of the unbounded factors of deciding well intertwine to form a single endless pursuit. Consider the relation between the pursuit of the Good and the pursuit of the Truth. The Good and the Truth are unbounded factors of deciding well. We need the Good to avoid deprivation, which hinders deciding well. We need the Truth to avoid ignorance, which also hinders deciding well. We pursue the Good by deciding well, which calls on us to pursue the Truth. We pursue the Truth by deciding well, which calls on us to pursue the Good. Hence, the pursuit of the Good and the pursuit of the Truth intertwine into a single pursuit."

were changed to:

"The next step is to recognize that the process of deciding well is the same for all timeless ends that are unbounded factors of deciding well. Hence, the endless pursuits

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of all of the unbounded factors of deciding well intertwine to form a single endless pursuit. Consider the relation between the pursuit of the Good and the pursuit of the Truth. We pursue the Good by deciding well, which calls on us to pursue the Truth. We pursue the Truth by deciding well, which calls on us to pursue the Good. Thus, the pursuit of the Good and the pursuit of the Truth intertwine into a single pursuit"

Chapter 3, Introduction, new fourteenth paragraph

Changed "a transcendent" to "an unbounded" in the first sentence.

Chapter 3, *The Ring of Truth*, thirteen paragraph

Changed "defining quality" to "quality" in the last sentence.

Chapter 3, *Refining Practical Stories*, fourth paragraph

Changed "timeless view of this work" to "timeless view of deciding well" in the third sentence.

Chapter 3, Refining Practical Stories, eighth paragraph, last sentence

"Deciding well calls for us to progress towards the timeless ideal of a good life for all rather than the temporal ideal of a state of the world in which no one can be made better off without making someone else worse off."

was changed to:

"Deciding well calls for us to learn by doing, not to act efficiently."

Chapter 3, Refining Practical Stories, ninth paragraph, last sentence

"Deciding well calls for us to leave the caves of our ancestors."

was changed to:

"Again, deciding well calls for us to learn by doing. It calls for us to leave the caves of our ancestors."

Changes in Version 2008.02.20

Chapter 1, Two Means of Deciding Wisely, second paragraph

Changed "decide well by dividing" to "divide" in the first sentence.

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Added the following sentence to the end of the footnote:

"As we shall see in the third chapter, this self-similar property of the timeless concept of excellence in means gives rise to a surprising relation between the boundless factors of the timeless end of deciding well."

Moved paragraph to the second sentence of the last paragraph of the preceding section.

Inserted the following paragraph:

"When it is possible to do so, we use timeless tools to choose problems and temporal tools to solve these problems. We also use timeless tools to help us to identify the things we are likely to need in order to solve unexpected problems. In the endless pursuit of deciding well, these are strategic assets."

Chapter 2, Trade, first paragraph, last sentence, footnote

Changed "The City, Wall Street, and the Chicago pits are slowly moving" to "This tends to happen as sectors move" in the last sentence.

Chapter 2, *Trust*, first paragraph

Changed "perform" to "act" in the last sentence.

Chapter 3

Changed "an unbounded" to "a boundless" in all (3 occurrences).

Changed "unbounded" to "boundless" in all (8 occurrences).

Chapter 3, Introduction, tenth paragraph, fourth and fifth sentences

"A less kind assessment is that it is little more than childish nihilism – the temper tantrum of people who are unwilling to accept believing well as a timeless end. A second less kind assessment that it is nothing more than a useful vehicle for special interests to maintain their special favors."

were changed to:

"A less kind assessment is that it is childish nihilism, which is to say the temper tantrum of people who are unwilling to accept believing well as a timeless end. A second less kind assessment is that it is little more than a means for special interests to gain favors."

Changed "nothing" to "little" in the fifth sentence.

Chapter 3, Introduction, twelfth paragraph, last three sentences

"In contrast, freedom and trust are bounded factors. We can have too much freedom, as is the case when a slave owner claims the freedom to own a slave. We can have too much trust, as is the case when a mark trusts a swindler."

were deleted.

Chapter 3, Introduction, thirteenth paragraph

Changed "process" to "endless process" in the first sentence.

Chapter 3, A Crude Look at the Whole, second paragraph

Inserted the following paragraph:

"When it is possible, people will use timeless tools to choose problems and temporal tools to solve these problems. People also use timeless tools to help them to identify the things they are likely to need in order to solve unexpected problems. Chief among these are practical wisdom, trust, and freedom. Practical wisdom includes knowledge of both timeless and temporal tools. Trust includes the belief that governments will act as expected, hence the rule of law. Freedom includes rights to property. In the endless pursuit of deciding well, practical wisdom, trust, and freedom are strategic assets."

Chapter 3, A Tale of Two Revolutions, title

Changed "A Tale of Two Revolutions" to "A Tale of Revolutions."

Changes in Version 2008.02.22

Chapter 1, Excellence in Means, tenth paragraph, last five sentences

"Timeless ends are goals that concern processes. Temporal ends are goals that concern events. Playing basketball well is a timeless end. Winning a basketball game is a temporal end. The difference between a timeless end and a temporal end is the difference between heading in a direction and arriving at a destination."

were changed back to:

"Temporal ends are goals that concern events. Timeless ends are goals that concern processes. Winning a basketball game is a temporal end. Playing basketball well is a timeless end. The difference between a temporal end and a timeless end is the difference between arriving at a destination and heading in a direction."

Chapter 1, Excellence in Means, eleventh paragraph

Changed "is" to "of" in the first sentence.

Chapter 1, Two Means of Deciding Wisely, second paragraph, footnote, last sentence

"As we shall see in the third chapter, this self-similar property of the timeless concept of excellence in means gives rise to a surprising relation between the boundless factors of the timeless end of deciding well."

was changed to:

"In the language of mathematician Benoît Mandelbrot, the endless process of deciding well is fractal. As we shall see in the third chapter, this self-similarity gives rise to a surprising relation among the boundless factors of deciding well."

Chapter 1, Two Means of Deciding Wisely, third paragraph

Changed "possible" to "practical" in the first sentence.

Chapter 3, Introduction, fourteenth paragraph

Changed "and our need to become part of something infinitely greater than ourselves thwart" to "thwarts" in the last sentence.

Chapter 3, The Elephant in the Room, second paragraph, second and third sentences

"We evolved to have the need to seek to become a part of something infinitely greater than ourselves, which is useful in securing the best chances of survival for ourselves and our offspring. From this religious impulse and our intellect emerged crude means of deciding well."

were changed to:

"We evolved to have the need to seek to become a part of something infinitely greater than ourselves, which is useful in securing the best chances of survival for our offspring and ourselves. Crude means of deciding well emerged from this religious impulse."

Chapter 3, The Elephant in the Room, last paragraph

Changed "process" to "timeless end" in the second sentence (2 occurrences).

Chapter 3, Refining Practical Wisdom, last paragraph, second footnote

Added the following sentences:

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"Foolish actions embed mistakes into our stocks of useful knowledge. These frozen mistakes pile up. If not released, the pent up stress in these "economic embacles" results in catastrophic debacles. Our beliefs about the world are part of the world that we need to explain if we are to find the best problems to solve and the best assets for solving the unexpected problems that life throws at us."

Chapter 3, Refining Practical Stories, fourth paragraph, last two sentences

"However, it is not the best concept. We would progress much more readily if policymakers sought *what we need to live well* rather than *what we currently want to consume*."

was changed to:

"However, we would progress much more readily if policymakers sought the timeless concept of wealth."

Chapter 3, Recursive Failures, first paragraph, footnote

Changed "truth" to "temporal truth" in the first sentence.

Deleted the last two sentences: "Reflexive' describes our mental hall of mirrors. 'Recursive' describes the process of moving forward through this hall of mirrors."

Chapter 3, Recursive Failures, last paragraph

"Chief among these are the inexhaustibility of knowledge and our insatiable need to link or relink with something infinitely greater than ourselves."

was changed to:

"Chief among these are (1) the problem of induction, (2) the inexhaustibility of knowledge, and (3) our religious need to become part of something infinite."

Chapter 3, Computer Models, first paragraph, second footnote

Changed "high level" to "high-level" in the second sentence.

Added the following sentences:

"The better the decision that created the block is, the more fluid its shape. Over time, other decisions may make these blocks more or less fluid."

Removed italics from the last two sentences. Promoted the footnote to a paragraph in the body of the text.

Chapter 3, A Crude Look at the Whole, first paragraph

Changed "ever better" to "well" in the first sentence.

Changed "better" to "well" in the second and third sentences.

Chapter 3, A Crude Look at the Whole, second paragraph

Changed "possible" to "practical to do so" in the first sentence.

Chapter 3, A Crude Look at the Whole, last paragraph

Changed "catastrophe" to "large debacles" in the last sentence.

Chapter 4, Judge Interventions, last paragraph

Changed "landlords" to "owners" in the last sentence.

Appendix D, second paragraph, second

"Most modern economists recognize problems in measuring the value of services and changes in product quality. However, they deny that all goods and services are means to living well. The problem of measuring services is universal. Worse, the problem of measuring quality is much harder than most modern economists believe it to be."

was changed to:

"The problem here is one of measuring what we need to live well, which calls for knowing the Truth about the Good. Plato only aspired to such knowledge. Only a fool would claim to have it. From a technical view, the problem of measuring services is universal and the problem of measuring quality is impossibly hard."

Changes in Version 2008.02.26

Preface, third paragraph

Removed italics on "is" in the first sentence and "is the pursuit of" in the last sentence.

Preface, seventh paragraph

Changed "a great debt" to "debts" in the first sentence.

Chapter 1, Excellence in Means, last paragraph

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Changed " "wise." to " "wise," because they wisely embrace what they want to know." in the last sentence.

Chapter 1, Two Views of Deciding Well, second paragraph

Changed "the timeless end" to "a timeless end" in the first sentence.

Chapter 1, Two Views of Deciding Well, last paragraph

Changed "stocks" to "our networks" in the first sentence.

Chapter 3, Introduction, last paragraph

Changed "reduce our sensations of reality to" to "express our knowledge in" in the second sentence.

Chapter 3, The Ring of Truth, first paragraph, end

Added the sentence: "Only then can we say that we have found a beautiful problem to solve."

Chapter 3, The Ring of Truth, second paragraph

Changed "our belief system" to "how well our beliefs fit together into a coherent whole" in the last sentence.

Chapter 3, The Ring of Truth, last paragraph

Changed "decide well" to "decide well by helping us to improve the coherence of our belief system" in the last sentence.

Chapter 3, Refining Everyday Thinking, fifth paragraph

Changed "stocks" to "networks" in the last sentence.

Chapter 3, Refining Practical Wisdom, last paragraph, last footnote

"Foolish actions embed mistakes into our stocks of useful knowledge. These frozen mistakes pile up. If not released, the pent up stress in these "economic embacles" results in catastrophic debacles. Our beliefs about the world are part of the world that we need to explain if we are to find the best problems to solve and the best assets for solving the unexpected problems that life throws at us."

were deleted.

Chapter 3, Refining Practical Stories, third paragraph

Changed "stocks" to "networks" in the third sentence.

Chapter 3, Computer Models, second paragraph

Changed "our stocks" to "parts of our networks" in the third sentence.

Deleted the fifth and sixth sentences: "The better the decision that created the block is, the more fluid its shape. Over time, other decisions may make these blocks more or less fluid."

Chapter 3, A Crude Look at the Whole, last paragraph, last sentence

"It focuses on progress and poor decision-making rather than on their effects, unemployment and inflation."

was changed to:

"It focuses on deciding well rather than on the effects of deciding poorly, which include unemployment and inflation."

Chapter 3, A Crude Look at the Whole, last paragraph, last sentence

"In as much as the rest of the world continues to progress, they lead to large debacles."

was changed to:

"Retarding progress robs the whole of life of a better future."

Changes in Version 2008.02.28

Preface, seventh paragraph

Deleted "not only reflects our sensations of the world accurately, but also" from the second sentence.

Preface, last paragraph

Changed "people" and "they" to "we" in the last sentence.

Chapter 1, Two Views of Deciding Well, second paragraph

Changed "the ever-repeating cycle" to "endlessly repeating the cycle" in the first sentence.

Chapter 2, Three Mistakes, second paragraph

Changed "information" to "knowledge" in the first sentence.

Chapter 3, Introduction, tenth paragraph

Changed "reasonable, but incomplete" to "rational" in the last sentence.

Chapter 3, The Ring of Truth, last paragraph

Changed "improve the coherence of" to "improve" in the last sentence.

Chapter 3, Trading Failures, first paragraph

Changed "information" to "knowledge" in the fourth sentence.

Changes in Version 2008.03.01

Preface, seventh paragraph

Changed " and W. V. O. Quine" to ", W. V. O. Quine, and Morton White" in the first sentence.

Changed "the ultimate end of science is to refine" to "science is the process of refining" in the second sentence.

Preface, eleventh paragraph

Changed "this process" to "breaking things down" in the third sentence.

Chapter 3, Introduction, fourth paragraph, footnote

Deleted "rather than the temporal result of refining everyday thinking" from the last sentence.

Added the sentence: "We might call this approach to believing well either "boundless" or "idealistic" pragmatism."

Chapter 3, Refining Practical Stories, third paragraph

Added "— wealth —" to the last sentence.

Chapter 3, Refining Practical Stories, fourth paragraph

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"In his most famous work, *An Inquiry into the Nature and Causes of the Wealth of Nations*, Adam Smith provided the world with a better concept of what policymakers ought to seek. Smith defined what they ought to seek to be the things that we want to consume.¹⁹ This temporal concept of wealth was a great advance over the mercantilist concept. However, we would progress much more readily if policymakers sought the timeless concept of wealth."

was changed to:

"Our modern concept of wealth¹⁹ is much better than this concept. However, it still tends to blind us to better problems to solve. We would do even better with the timeless concept of wealth."

and appended to the end of the third paragraph.

Changed "Smith" to "Adam Smith" in the first sentence of the footnote.

Chapter 3, Refining Practical Stories, new fourth paragraph, first sentence

"From the timeless view of deciding well, we can envision a science based on the concept of what we ought to seek as those things that we need to live well."

was changed to:

"We can envision a practical science based on pursuing the timeless concept of wealth."

Chapter 3, Refining Practical Stories, new fifth paragraph

Deleted the first sentence:

"We ought to weed out members of the set of stories that fail to help us find what we need to live well, that is, to pursue the Good."

Appended the remaining two sentences to the new fourth paragraph

Chapter 3, Refining Practical Stories, newest fifth paragraph, first two sentences

"We also ought to weed out members of the set of stories that fail to help us find what we need to pursue Justice. One way that we can think about how best to decide to pursue Justice is by thinking about how best to decide well."

was changed to:

"We also ought to weed out members of the set of stories that fail to help us find what we need to treat others well. For example, we can weed out all stories that fall short of

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the timeless end of Justice. Foremost of these are stories that concern efficiency. We pursue Justice by deciding well."

Chapter 3, *Refining Practical Stories*, newest sixth paragraph

"We can see this difference in the modern economic general equilibrium model. This model describes the conditions that yield the state of the world in which no one can be made better off without making someone else worse off.²⁴ In modern economic terms, it describes the conditions for allocating scarce resources efficiently. The major condition is that the marginal benefits of acting just equal the marginal costs of acting everywhere in the economy. This equilibrium condition determines what each factor of production receives. What is missing from this model is what we owe the people who created the knowledge that we use at no charge. As previously argued, the debts that we owe to those who provided us with the knowledge that we use freely, we pay to others by deciding well. Deciding well calls for us to learn by doing, not to act efficiently."

"24 The technical term for this ideal state of the world is Pareto optimality."

was changed to:

"We can see this difference in the modern economic general equilibrium model, which describes what each factor of production receives under conditions of perfect efficiency. What is missing from this model is what we owe to the people who created the knowledge that we use at no charge. As previously argued, the debts that we owe to these people we pay to others by deciding well. Deciding well calls for us to learn by doing, not to act efficiently.

Appended the the fifth paragraph.

Chapter 3, Refining Practical Stories, second to last paragraph, first three sentences

"We ought to weed out any story about Justice based on the temporal concept of efficiency. Further, we ought to weed out all other temporal stories about Justice. This includes all stories based on the temporal concept of sustaining a good society."

were changed to:

"Similarly, we ought to weed out all stories that aim at sustaining a good society."

Chapter 3, Refining Practical Stories, last paragraph

Changed "foolish stories" to "stories" in the first sentence.

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Changes in Version 2008.03.03

Chapter 1, Two Views of Deciding Well, first paragraph

Changed "justify" to "deserve" in the last sentence.

Chapter 1, Two Views of Deciding Well, second paragraph

Changed "justify" to "deserve" in the third sentence.

Chapter 2, *Pleasure and Pain*, last paragraph

Deleted "Dutch" in the first sentence.

Chapter 3, Introduction, second paragraph

Deleted "Scottish Enlightenment" in the first sentence.

Chapter 3, Introduction, third paragraph

Deleted "British" in the first sentence.

Chapter 3, Introduction, fifth paragraph

Changed "Philosopher" to "Twentieth century philosopher" in the first sentence.

Chapter 3, Introduction, fifteenth paragraph

Deleted "American moral" in the first sentence.

Chapter 3, The Ring of Truth, second paragraph

Changed "English romantic" to "poet" in the first sentence.

Chapter 3, The Ring of Truth, last paragraph, last sentence

"It ought to help us to decide well by helping us to improve our belief system."

was changed to:

"It ought to enlighten us."

Changes in Version 2008.03.05

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Chapter 2, Profit, first paragraph, footnote

Changed "Profits" to "Temporal profits" in the second sentence.

Removed italics from the last sentence.

Chapter 3, Introduction, seventh paragraph

Changed "seek to live well" to "pursue the timeless end of living well" in the last sentence.

Changed "seek to believe well" to "pursue the timeless end of believing well" in the last sentence.

Changed "seek to live and work" to "pursue the timeless end of living and working" in the last sentence.

Chapter 3, Introduction, tenth paragraph, last three sentences

"A less kind assessment is that it is childish nihilism, which is to say the temper tantrum of people who are unwilling to accept believing well as a timeless end. A second less kind assessment is that it is little more than a means for special interests to gain favors. The most enlightening of these three assessments is the kind one."

were deleted.

Merged paragraph with next paragraph

Chapter 3, Introduction, new eleventh paragraph

Changed "bridge" to "build a bridge between" and "we use" to "that we use" in the first sentence.

Changed "first step" to "first step in building this bridge" in the second sentence.

Chapter 3, Introduction, new fourteenth paragraph

Changed "work too well or live too well" to "live or work too well" in the second sentence.

Chapter 4, *The Explicit Experiment*, first paragraph (HTML version)

Changed "--" to "—" in all (2 occurrences).

Chapter 4, *The Explicit Experiment*, third paragraph (HTML version)

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Changed "---" to "---" in all (7 occurrences).

Chapter 4, The Explicit Experiment, second to last paragraph

"There are at least two ways of reconciling these conflicting sovereign stories. The first is to claim that the Declaration of Independence story concerns justice and the Constitution story concerns legality. This claim of a source of justice above and beyond the general will of society conflicts with the political agenda of true believers in socialism who want to enshrine what they believe to be good in law. The second is to dismiss the Creator statement in the Declaration of Independence as a nominally religious statement that has become ritual and non-religious through long customary usage. This claim of "ceremonial deism" conflicts with the political agenda of true believers in theism who want to enshrine what they believe to be good in law."

was changed to:

"There are at least two ways of settling this conflict between sovereign stories. The first is to claim that the Declaration story concerns justice and the Constitution story concerns legality. This claim of a source of justice higher than the general will of society favors theists who want to enshrine what they believe about the good in law. The second is to dismiss the Creator statement in the Declaration as a theistic statement that has become ritual and non-theistic through long customary usage. This claim of "ceremonial deism" favors socialists who want to enshrine what they believe about they believe about they believe about the good in law.

Chapter 4, The Explicit Experiment, last paragraph

Changed "the good" to "what is true" in the first sentence.

Changed "socialists" to "theists" and "social" to "theistic" in the first half of the second sentence.

Changed "theists" to "socialists" and "theistic" to "social" in the second half of the second sentence.

Changed "effect" to "short" and "means of linking or relinking with something greater than ourselves" to "religion" in the last sentence.

Appended this paragraph to the end of the preceding paragraph.

Chapter 4, The Sovereign Story of Deciding Well, title

Changed "Deciding Well" to "Practical Science" in the title sentence.

Chapter 4, The Sovereign Story of Practical Science, second paragraph

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"Using the American Declaration of Independence as a model, the timeless end of deciding well yields a simple and straightforward sovereign story: We hold these truths to be self-evident, that all intelligent life has the sovereign right to seek to decide well.--That to secure this right, governments are instituted that derive their powers from the consent of the governed.--That whenever a government becomes an obstacle to this end, it is the right of the governed to alter or to abolish it, and to institute a new government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect deciding well.⁹"

"⁹ Arguably, the sovereign story of deciding well is simply the timeless version of the sovereign story of the Declaration of Independence. The Declaration, as interpreted by philosopher Mortimer Adler, calls for us to pursue happiness justly. The sovereign story of deciding well calls for us to pursue happiness ever more justly. For more on Adler's interpretation of the Declaration of Independence, see his book, *We Hold These Truths* (New York, Macmillan Publishing Company, 1987).

was changed to:

"Using the Franklin's sovereign story of moral science as a model, the science of practical wisdom yields the following story:

We hold these beliefs to be true beyond all doubt. All intelligent life has the sovereign right to pursue the timeless end of deciding well. To secure this right, individuals form governments that derive their powers from the consent of the governed. Whenever a government hinders deciding well, it is the right of the governed to alter or to abolish it, and to form a new government based on what they believe most likely to help them to decide well.⁹"

"⁹ Arguably, the sovereign story of deciding well is simply a refinement of the sovereign story of the Declaration of Independence. The Declaration, as interpreted by philosopher Mortimer Adler, calls for us to pursue happiness justly, where happiness is the timeless end of living well. The sovereign story of deciding well calls for us to pursue happiness justly, where happiness is the timeless end of living well and justly concerns the timeless end of living and working with others well. For more on Adler's interpretation of the Declaration of Independence, see his book, *We Hold These Truths* (New York, Macmillan Publishing Company, 1987).

Chapter 4, The Sovereign Story of Deciding Well, last paragraph

Changed "designed" to "built" in the last sentence.

Changes in Version 2008.03.07

Preface, ninth paragraph

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Changed "the recursive process of deciding well" to "this recursive process" in the second sentence.

Chapter 1, Excellence in Means, last paragraph, footnote, last two sentences

"In the language of mathematician Benoît Mandelbrot, the endless process of deciding well is fractal. As we shall see in the third chapter, this self-similarity gives rise to a surprising relation among the boundless factors of deciding well."

were deleted.

Chapter 3, The Ring of Truth, first paragraph, first sentence

"Pursuing one boundless factor of deciding well calls for pursuing all boundless factors of deciding well."

was changed to:

"Pursuing the timeless end of believing well calls for pursuing all boundless factors of deciding well."

Chapter 3, The Ring of Truth, last paragraph

Changed "It" to "Art" in the last sentence.

Chapter 4, Free Trade, first paragraph, footnote, end

Added the sentence: "The benefits of free trade go far beyond promoting efficiency in production."

Changes in Version 2008.03.08

Chapter 3, Computer Models, first paragraph, end

Added the footnote:

"²⁷ Note that the endless process of deciding well is a recursive process that involves learning by doing. Hence, we should expect a power law rather than Gaussian ("bell curve") probability distribution in most resulting phenomena. For a clear and concise explanation of why this is important, see the March 23, 2006 *Financial Times* article by Benoit Mandelbrot and Nassim Taleb titled "*A Focus on Exceptions that Prove the Rule*," reprinted online at <<u>http://www.ft.com/cms/s/2/5372968a-ba82-11da-980d-0000779e2340,dwp_uuid=77a9a0e8-b442-11da-bd61-0000779e2340.html> (8 March 2008)."</u>

Chapter 3, end

Added the section:

"Conclusion

This chapter put forth a timeless plan for refining our beliefs. Following this timeless plan calls for us to test it against experience. Benjamin Franklin has shown us how to do so."

Afterword, first and last paragraphs

Changed "people of the United States" to "most people of the United States" in all (2 occurrences).

Changes in Version 2008.03.10

Chapter 3, Conclusion, first paragraph

"This chapter put forth a timeless plan for refining our beliefs. Following this timeless plan calls for us to test it against experience. Benjamin Franklin has shown us how to do so."

was changed to:

"This chapter applied the timeless concept of deciding well to the timeless end of believing well. We pursue the timeless end of believing well by deciding well. In theory, deciding well calls for us to consider these boundless factors in even our smallest decisions - it calls for us to see the world in a grain of sand. It also calls for us to judge not only footholds and handholds but also paths leading to the Good, the Truth, Wisdom, Justice, and Beauty.

"The timeless end of believing well gives rise to the timeless concept of science as the research program of, by, and for intelligent life. Timeless science reminds us that not everything that counts can be counted, and not everything that can be counted counts. It also reminds us that applying the tools of the true sciences to the intelligent life sciences foolishly ignores the two-way relation between our beliefs and reality. Our theories about how ants behave do not change the way that ants behave, but our theories about how we behave tend to change the way that we behave. Sociobiology may be a good tool for studying ants, but it is a poor tool for studying intelligent life.

"Timeless science calls for testing all beliefs against experience, including the beliefs that support it. The next chapter explains how we may test timeless science and the belief system that supports it."

Chapter 4, The Sovereign Story of Practical Science, title

Changed "Practical Science" to "Timeless Science" in the title.

Chapter 4, The Sovereign Story of Deciding Well, second paragraph

Changed "science of practical wisdom" to "timeless science" in the first sentence.

Chapter 4, The Sovereign Story of Deciding Well, second paragraph, footnote

"Arguably, the sovereign story of timeless science is simply a refinement of the sovereign story of the Declaration of Independence. The Declaration, as interpreted by philosopher Mortimer Adler, calls for us to pursue happiness justly, where happiness is the timeless end of living well. The sovereign story of deciding well calls for us to pursue happiness ever more justly, where happiness is the timeless end of living well and justly concerns the timeless end of living and working with others well. For more on Adler's interpretation of the Declaration of Independence, see his book, *We Hold These Truths* (New York, Macmillan Publishing Company, 1987)."

was changed to:

"The sovereign story of timeless science is simply a refinement of Franklin's sovereign story of moral science. The Declaration of Independence, as interpreted by philosopher Mortimer Adler, calls for us to pursue happiness justly, where happiness is the timeless end of living well. The sovereign story of timeless science calls for us to pursue happiness *ever more* justly. For more on Adler's interpretation of the Declaration, see his book, *We Hold These Truths* (New York, Macmillan Publishing Company, 1987)."

Changes in Version 2008.03.15

Acknowledgments, second paragraph

Changed "book" to "work" in the first sentence.

Preface, first paragraph

Changed "book" to "essay" in the first sentence.

Preface, seventh paragraph

Changed "common search for the truth" to "search for knowledge" in the first sentence.

Changed "process" to "endless process" in the second sentence.

"This is an infinitely large problem."

was changed to:

"I call this approach to science *boundless pragmatism*. Because one of the boundless factors of deciding well is knowledge of the unchanging elements and relations (ideal forms) that underlie all sensations, the oxymoronic *idealistic pragmatism* works as well."

Preface, eighth and ninth paragraphs

"We can solve infinitely large problems by finding recursive processes that move us ever closer to the solution. A recursive process is a finite process that we apply repeatedly so that the results of one cycle become the conditions for the next. To solve the problem of determining the transcendental number pi, we find a recursive process that moves us ever closer to determining pi. Similarly, to solve the infinitely large problem of refining our beliefs, we find a recursive process that moves us ever closer to determining the truth.

"We can move ever closer to determining the truth by deciding well, where deciding well is the recursive process that begins with finding a problem to solve based on the timeless end of determining the truth. We can improve this recursive process by improving the factors of deciding well. These factors include practical wisdom, trust, and liberty."

were deleted.

Preface, new ninth paragraph, last sentence

"Despite the fact that definite knowledge of how we fit into the whole, like definite knowledge of pi, will remain forever beyond our grasp, we should not pass over it in silence.

was changed to:

"Despite the fact that this knowledge, like definite knowledge of the transcendental number pi, will remain forever beyond our grasp, we should not pass over it in silence. Beliefs about how we fit into the whole help us to decide how to live well.

Preface, new tenth paragraph

Changed "book" to "work" in the first sentence.

Changed "chapter" to "section" in the second, fourth, and sixth sentences.

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Changed "this timeless concept" to "the timeless concept of deciding well" in the first sentence.

Preface, last paragraph

Deleted: "Enjoy."

Chapter 1, Excellence in Means, tenth paragraph

Switched positions of the third and fourth sentences.

Chapter 2, Introduction, first paragraph

Changed "chapter" to "section" in the first and last sentences.

Chapter 2, Introduction, last paragraph

Changed "chapter" to "section" in the last sentence.

Chapter 3, Introduction, first paragraph

Changed "chapters" to "sections" in the first sentence.

Changed "chapter" to "section" in the last sentence.

Chapter 3, Introduction, fourth paragraph, footnote

Changed "the first section of this chapter" to "this section" in the first sentence.

Chapter 3, The Ring of Truth, third paragraph

Changed "chapter" to "section" in the first sentence.

Deleted the last sentence: "We might call this approach to believing well either "boundless" or "idealistic" pragmatism."

Chapter 3, Refining Practical Stories, fifth paragraph

Changed "pay" to "ought to pay" in the second to last sentence.

Added the footnote:

"²⁴ Governments promote learning by doing by assigning property rights to some types of newly created knowledge. This is a crude solution to the problem of promoting the ideal amount of learning by doing."

Chapter 3, Refining Practical Stories, sixth paragraph

Changed "sustaining" to "to sustain" in the second sentence.

Chapter 3, Conclusion, first paragraph

Changed "chapter" to "section" in the first sentence.

Chapter 3, Conclusion, last paragraph

Changed "chapter" to "section" in the last sentence.

Chapter 4, Introduction, first paragraph

Changed "chapters" to "sections" in the first sentence.

Changed "chapter" to "section" in the last sentence.

Chapter 4, Promote Savings for Welfare, first paragraph

Changed "encourage" to "help" in the second sentence.

Chapter 4, Promote Savings for Welfare, second paragraph

Changed "encouraging" to "helping" in the last sentence.

Chapter 4, Choosing Governments, paragraph

Changed "encourage" to "foster" in the last sentence.

Appendix A

Changed "at no additional cost, doing so is less expensive" to "for the same cost, doing so is less costly" in the first, second, and third bullet points.

Appendix B, Balanced Excellence, last paragraph

Changed "Dionysian (emotional) and Apollonian (reasonable)" to "emotional (Dionysian) and reasonable (Apollonian)" in the first sentence.

Changes in Version 2008.03.20

Preface, fifth paragraph

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Changed "knowledge of the Divine" to "knowing the Divine" in the second sentence.

Preface, seventh paragraph

Changed "is" to "ought to be" and "endless" to "endless" in the second sentence.

Preface, seventh paragraph

Changed "is" to "ought to be" and "endless" to "endless" in the second sentence.

Chapter 1, Excellence in Means, third to last paragraph, first sentence

"Understanding the difference between the RTS and EOQ concepts of excellence in means calls for understanding the difference between timeless (normative) and temporal ends."

was changed to:

"The major difference between the EOQ and RTS models concerns their ends. The EOQ model has the temporal end. In contrast, the RTS model has a timeless (normative) end."

Chapter 1, Two Views of Deciding Well, first paragraph, end

Added the following sentence: "Our actions reveal our preferences, which is to say that to decide well is to decide perfectly."

Chapter 1, Two Views of Deciding Well, last two paragraphs

Reversed the order of the last two paragraphs.

Chapter 2, Practical Wisdom, first paragraph

Changed "best means to them" to "best means to them well" in the fourth sentence.

Chapter 3, Introduction, tenth paragraph

Inserted paragraph break after second sentence.

Chapter 3, Introduction, new twelfth paragraph, first sentence

"We can build a bridge between Aristotle's temporal world of everyday thinking and Plato's timeless world of ideal forms by using Plato's ideal forms as the basis for the timeless tools that we use to find problems to solve."

was made into its own paragraph and changed to:

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"The *wise* response to this schism at the core of Western thought is to set a course from the temporal world of everyday thinking to the timeless world of ideal forms. This course is the timeless end of knowing the ideal forms. We pursue this timeless end by deciding well."

Chapter 3, Introduction, new thirteenth paragraph, first sentence

Changed "building this bridge" to "setting this course" in the first sentence.

Chapter 3, Introduction, fourth from last paragraph, first two sentences

"Justice is also a boundless factor of deciding well. We cannot live or work too well with others."

were changed to:

"We need others to pursue the Good and the Truth. We cannot live or work too well with others. Hence, Justice is also a boundless factor in deciding well."

Chapter 3, Introduction, third to last paragraph

Changed "inescapable ignorance" to "ignorance" in the first sentence.

Changed "greater" to "infinitely greater" in the second sentence of the second footnote.

Chapter 3, Introduction, second to last paragraph

Changed ", we pay to" to " we pay to" in the second and third sentences.

Chapter 3, The Ring of Truth, last paragraph, footnote

"In Latin, *De gustibus non est disputandum*. At issue is not the belief that that tastes tend to remain stable over time, but rather the belief that tastes ought to remain stable over time. From the timeless view of deciding well, this distinction concerns the difference between the temporal and the timeless views of living well."

was changed to:

"In Latin, *de gustibus non est disputandum*. From the temporal view of marginalist economics, the issue is whether tastes remain stable during the period under consideration. From the timeless view of recursionist economics, the issue is whether tastes ought to remain stable."

Chapter 3, The Elephant in the Room, first paragraph

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Changed "yet another" to "another" in the first sentence.

Chapter 3, Refining Practical Stories, fourth paragraph, first footnote, last sentence

"For more on the subject of human needs, see Appendix B."

was deleted.

Chapter 3, Recursive Failures, last paragraph

Changed "infinite" to "infinitely greater than ourselves" in the second sentence.

Chapter 4, Sovereignty, third paragraph, footnote

"There are three basic means of securing sovereign rights. The first is to tell stories that appeal to what people currently believe is good. We may call this the pragmatic approach. The second is to tell stories that attempt to change what people believe is good. We may call this the propaganda approach. The third is to tell stories that appeal to what people believe is the ideal good. We may call this the idealistic approach."

was deleted.

Chapter 4, The Sovereign Story of Timeless Science, first paragraph

Added the sentence: "What civil faith best promotes deciding well?"

Changed "wise to protect" to "wise for the state to protect" in the third sentence.

Chapter 4, Judge Interventions, last paragraph

Changed "owners, who" to "owners who" in the last sentence.

Afterword, second paragraph

Changed "tradition" to "timeless tradition" in the fifth sentence.

Appendix B, Introduction, first paragraph

Changed "not," to "not separate and distinct," in the third sentence.

Changed "are," to "are separate and distinct," in the fourth sentence.

Appendix B, Heroic Death, last paragraph

Appended last paragraph into second to last paragraph.

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Appendix B, Atheism, title

Changed title to "*Einstein's Twin Warnings*." Appended last paragraph into second to last paragraph.

Appendix B, Theism, title

Deleted title. Merged section in with previous section. Appended last paragraph into second to last paragraph.

Changes in Version 2008.03.24

Acknowledgements, fourth paragraph, fourth sentence

"My mind could not get around the boundless problem of how a theory could be both useful (in predicting what happens in education markets) and foolish (as a guide for making career decisions)."

was deleted.

Preface, seventh paragraph

Changed "this approach to science" to "this approach" in the third sentence.

Chapter 1, Setting Words Aright, first paragraph, last sentence

"Concepts are *knowledge resources*."

was changed to:

"Concepts are resources for helping us to achieve our ends."

Chapter 1, Setting Words Aright, second paragraph, beginning

Added the sentence: "Concepts are a type of knowledge resource."

Chapter 1, Setting Words Aright, last paragraph

Changed "do so" to "view it" in the second sentence.

Chapter 1, Excellence in Means, second paragraph

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"Suppose our factory needs two hundred widgets five days a week for fifty weeks. At one extreme, we could choose to produce fifty thousand once. At the other, we could choose to produce one unit two hundred times each working day. Between these two extremes lies the most efficient order quantity. The EOQ model yields the quantity at which the marginal cost and marginal benefit of setting up just equal one another. This quantity maximizes the net benefit of setting up *for our current knowledge of how to set up tools.*"

was changed to:

"Suppose our factory expects to sell one hundred thousand new model cars. Each of these cars needs a hood. The stamping machine that makes these hoods also makes other parts. Each time we set up this machine tool uses resources. Storing hoods and other parts also uses resources. How many hoods should we make at once? At one extreme, we might make one batch of one hundred thousand hoods. At the other extreme, we might make one hundred thousand batches of one hood. Between these two extremes lies the most efficient number to make at once. The EOQ model yields the number at which the marginal cost and marginal benefit of ordering one more hood per batch just equal one another. This number maximizes the net benefit of setting up the tool for our current knowledge of how to set up tools."

Chapter 1, Excellence in Means, third paragraph

Changed ", much less improve the environment for learning" to "how to set up ever more efficiently" in the third sentence.

Changed "look for better ways of setting up tools" to "learn how to set up ever more efficiently" in the fifth sentence.

Changed "invest in learning-by-doing" to "promote such learning" in the last sentence.

Chapter 1, Excellence in Means, fourth paragraph

Changed "evaluating" to "pricing" in the fourth sentence.

Changed "cannot measure the value of" to "price" and "the value of resources" to "the value of the resources" in the fifth sentence.

Chapter 1, Excellence in Means, sixth paragraph

"We cannot judge the full value of RTS without understanding the part it played in Toyota's history. In the early postwar years, Japan's small market for trucks and lack of capital forced Toyota to produce trucks in small batches. Production supervisor Taiichi Ohno knew that his firm could never catch up to Western firms by using Western means of making trucks. Instead, he envisioned factories making large

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numbers of similar parts rather than large numbers of identical parts. Batches of similar parts would flow like the mass production of identical parts."

was changed to:

"We cannot judge the full value of RTS without understanding the part it played in the rise of Toyota. In the early postwar years, Japan's small market for trucks and lack of capital forced Toyota to produce trucks in small batches. In contrast, American firms were making cars and trucks in huge batches. A Toyota supervisor named Taiichi Ohno knew that his firm would never be able to compete by making cars and trucks the same way that American firms did. Instead, he envisioned making similar parts as smoothly as identical parts."

Chapter 1, Excellence in Means, seventh paragraph

Changed "Ohno's" to "This" in the first sentence. Merged paragraph into the preceding paragraph.

Chapter 1, Excellence in Means, new seventh paragraph

Changed "production processes" to "processes" in the first sentence.

Changed "elasticity of kanban links allows the production control system" to "elastic links allow the control system" in the second sentence.

Changed "kanban links" to "links" in the third sentence.

Chapter 1, Two Views of Deciding Well, last paragraph

Changed "timeless models" to "timeless tools" in the second sentence.

Changed "these" to "these resources" in the last sentence.

Chapter 2, Introduction, second paragraph

Changed "military terms" to "planning terms" in the last sentence.

Chapter 2, Trade, first paragraph, footnote

Changed "more than names on a map" to "more firm than the firms they contain" in the seventh sentence.

Deleted the last sentence: "This tends to happen as firms enter cyberspace."

Chapter 3, Introduction, fourth from last paragraph, last two sentences

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"If we are intelligent and honest, the problem of induction thwarts all efforts to reduce the infinitely large problem of determining the truth about Justice to a finite problem. Further, the inexhaustibility of knowledge thwarts all efforts to reduce the infinitely large problem of determining the good about Justice to a finite problem."

were deleted.

Chapter 3, Introduction, second from last paragraph

Changed "cooperating" to "cooperating in living well" in the second sentence.

Changed "promote cooperation" to "cooperate" in the third sentence.

Chapter 3, Introduction, last paragraph

Changed "cooperation in" to "the timeless end of" in the first sentence.

Changed "this cooperation" to "cooperating in deciding well" in the first sentence.

Chapter 4, Judge Interventions, end

Added the subsection:

"Tax Well

The power to tax is not only the power to raise funds but also the power to change decisions. Policymakers ought to give as much attention to how they tax as how they spend. The people who pay taxes are often not the people who bear the burden of them. A tax on practical wisdom is never wise."

Chapter 4, Lower Trade Barriers, all

Promoted subsection to third position.

Appendix C, *Folding in Processes*, eighth paragraph

Changed "(job shop)" to "(job shop) production" in the first sentence.

Changes in Version 2008.03.28

Chapter 3, Introduction, twelfth paragraph

"The *wise* response to this schism at the core of Western thought is to set a course from the temporal world of everyday thinking to the timeless world of ideal forms.

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This course is the timeless end of knowing the ideal forms. We pursue this timeless end by deciding well."

was changed to:

"The *wise* response to this schism at the core of Western thought is to pursue the timeless end of knowing the unchanging elements and forms that underlie all sensations of reality. We pursue this timeless end by deciding well."

Chapter 3, *The Ring of Truth*, fifth paragraph

Changed "grunge rock" to "rock music" in the fifth sentence.

Chapter 3, Refining Practical Stories, fifth paragraph, first two sentences

"We also ought to weed out members of the set of stories that fail to help us find what we need to treat others well. For example, we can weed out all stories that fall short of the timeless end of Justice."

was changed to:

"We also ought to weed out all stories that fall short of the timeless end of Justice."

Deleted the footnote: "²⁴ Governments promote learning by doing by assigning property rights to some types of newly created knowledge. This is a crude solution to the problem of promoting the ideal amount of learning by doing."

Chapter 4, The Explicit Experiment, last paragraph

Changed "In short, both groups want their religion to be" to "Both groups want their religion to become" in the last sentence.

Changes in Version 2008.03.31

Chapter 1, Excellence in Means, second to last paragraph

Changed "We" to "From this temporal view, we" in the second sentence.

Moved the last sentence:

"Modern economists call people who act in this way "rational.""

to the end of the first paragraph in the Two Views of Deciding Well section.

Chapter 1, Excellence in Means, last paragraph

Changed "We" to "From this timeless view, we" in the second sentence.

Moved the last sentence:

"We commonly call people who act in this way "wise.""

to the end of the first paragraph in the Two Views of Deciding Well section.

Chapter 3, Introduction, eleventh paragraph, last sentence

Inserted the sentence:

"Further, he split the study of nature and motion, which he called physics, from the study of first causes and principles, which he called wisdom, first philosophy, and theology."

Chapter 3, Introduction, fifteenth paragraph, first two sentences

"We need others to pursue the Good and the Truth. We cannot live or work too well with others."

were changed to:

"The last step is to recognize that we need the help of others in this endless pursuit. Further, we cannot live and work too well with others."

Chapter 3, Introduction, fifteenth paragraph

Inserted a paragraph break at the end of the second sentence.

Added the sentence: "We find ourselves in a mental hall of mirrors."

Chapter 3, The Ring of Truth, third paragraph

Changed "definitions" to "concepts" in the first sentence.

Chapter 3, The Ring of Truth, last two paragraphs

"The interplay of beauty and belief is complex. Out of this complexity emerges art that engages us on many levels. A great work of art, such as a story that can we can understand on more than one level, can change from being beautiful to being mundane to being once again beautiful. For example, as a child we may find Lewis Carroll's *Alice Through the Looking Glass* to be an enchanting bedtime story; as a teenager we

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may find it to be childish; and as an adult we may find in it to be an insightful look into the way that language colors the way that we perceive the world.

"This timeless definition of beauty helps us to explain why modern educators do not value music and the other fine arts as highly as Plato did. Plato saw music and the other arts as a means of transcending everyday life in order to perceive the Truth. Modern educators do not value music and other fine arts as means of transcending everyday life in order to decide well. From the modern view, there is no difference between seeking beauty and seeking Beauty. There is no disputing taste.¹⁰ From the timeless view, there is a difference between seeking beauty and seeking Beauty. Art ought to do more than to shock us or speak to us. Art ought to enlighten us."

"¹⁰ In Latin, *de gustibus non est disputandum*. From the temporal view of marginalist economics, the issue is whether tastes remain stable during the period under consideration. From the timeless view of recursionist economics, the issue is whether tastes ought to remain stable."

were changed to:

"This timeless concept of beauty helps to explain why modern educators do not value the fine arts highly. From the modern view, the fine arts do not help us to decide well. There is no difference between seeking beauty and seeking Beauty. There is no disputing taste. From the timeless view, the fine arts help us to decide wisely. There is a difference between seeking beauty and seeking Beauty. Art ought to do more than to shock us or speak to us. Art ought to enlighten us."

(Note that "Alice Through the Looking Glass" ought to have been "Through the Looking-Glass, and What Alice Found There.")

Chapter 3, Refining Everyday Thinking, last paragraph

Changed "final" to "last" in the sixth sentence.

Chapter 3, Recursive Failures, first paragraph, footnote

Changed "temporal truth" to "(temporal) truth" in the second sentence.

Changed "philosopher of science Thomas Kuhn's" to "Thomas Kuhn's" in the third sentence.

Added the sentence: "By taking a longer view, the crowd shifted Kuhn's paradigm paradigm."

Chapter 4, The Sovereign Story of Timeless Science, second paragraph, footnote

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Changed "happiness *ever more* justly" to "happiness justly *ever better*" in the third sentence.

Chapter 4, Economic Policy, first paragraph

Changed "actions" to "aphoristic actions" in the last sentence.

Chapter 4, Promote Free Trade, first paragraph

Changed "practical wisdom" to "wisdom" in the last sentence.

Appendix B, Balanced Excellence, last paragraph, third sentence.

"Examples include the beliefs that (1) we have as many lifetimes as it takes to reach mystical union, (2) we can reach the ultimate end of existence in an existence after death, and (3) we can reach the ultimate end of existence through revering life."

was changed to:

"Examples include the beliefs that we have as many lifetimes as it takes to reach mystical union and that we can reach the ultimate end of existence in an existence after death."

Changes in Version 2008.04.06

Chapter 1, Excellence in Means, eighth paragraph, footnote, last sentence

"For more on the Toyota production system, see Appendix C."

was deleted.

Chapter 3, Conclusion, first paragraph

"This section applied the timeless concept of deciding well to the timeless end of believing well. We pursue the timeless end of believing well by deciding well. In theory, deciding well calls for us to consider these boundless factors in even our smallest decisions — it calls for us to see the world in a grain of sand. It also calls for us to judge not only footholds and handholds but also paths leading to the Good, the Truth, Wisdom, Justice, and Beauty."

was changed to:

"This section applied the timeless concept of deciding well to the timeless end of believing well. We pursue the timeless end of believing well by deciding well.

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Deciding well calls for us to judge not only footholds and handholds but also paths leading to the Good, the Truth, Wisdom, Justice, and Beauty. In theory, it also calls for us to consider these timeless ends in even our smallest decisions — it calls for us to see the world in a grain of sand."

Chapter 4, Choosing Governments, all

"Choosing Governments

From the timeless view of deciding well, governing well is a matter of helping all of us to decide well. Until we choose our governments by how well they govern, we will not get governments that foster the better angels of our nature."

was changed to:

"Conclusion

From the timeless view of deciding well, governing well is a matter of helping all of us to decide well. Until we choose our governments by how well they govern, we will not get governments that foster knowledge useful in deciding well. We will not get governments that foster the better angels of our nature.

"In a larger sense, governing well is a matter of testing our beliefs about Justice. We ought to ensure that our experiment is properly run, which is to say that our sovereign rights story is clear and that our laws, habits, customs, and actions conform to it. Further, we ought to encourage rival experiments in revering life well. To do otherwise is to deny our role as researchers in the research program of, by, and for intelligent life. To do otherwise is to claim that we have found the Truth about Justice."

Changes in Version 2008.04.12

Preface, fifth paragraph

Changed "philosophy" to "philosophy, which calls to mind the work of August Comte," in the first sentence.

Changed "definite" to "certain" in the third sentence.

"We can imagine: (1) theists without religious zeal, (2) theists without faith in the existence of the Divine, (3) theists with faith in the chance to win a week of Las Vegas debauchery, (4) atheists with faith in the non-existence of the Divine, and (5) atheists pursuing the transcendental values of truth, justice, and beauty with religious zeal."

was changed to:

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"We can imagine theists without religious zeal, without faith in the existence of the Divine, or with faith in the chance to win a trip to Las Vegas. We can also imagine atheists with faith in the non-existence of the Divine or pursuing justice with religious zeal."

Preface, sixth paragraph

Changed "belief system" to "belief system as expressed in this quote" in the first sentence.

Chapter 1, Excellence in Means, second to last paragraph

Changed "that we can solve" to "to solve" in the last sentence.

Chapter 2, Three Mistakes, first paragraph

Changed "strategy for learning" to "means of creating techniques that involved paying workers not only for their skilled hands but also for their trained minds" in the last sentence.

Chapter 2, Profit, first paragraph, footnote

"⁵ We should never use this timeless concept of profit for the temporal task of assessing results. Temporal profits are not always the result of deciding well. Buying a ten-dollar lottery ticket that has a ten percent chance of winning twenty dollars is foolish regardless of the outcome. Conversely, losses are not always the result of deciding poorly. Buying a ten-dollar lottery ticket that has a ten percent chance of winning a million dollars is wise regardless of the outcome. To attribute success solely to good decision-making or failure solely to poor decision-making is foolish."

was changed to:

"⁵ We should never use this timeless concept of profit for the temporal task of assessing the quality of decision-making. Investing ten dollars in a risky venture that has a certain expected value of a thousand dollars is wise regardless of the outcome. Conversely, investing a thousand dollars in a risky venture that has a certain expected value of ten dollars is foolish regardless of the outcome. Temporal profits are not always the result of deciding well and temporal losses are not always the result of deciding well and temporal profits solely to good decision-making or temporal losses solely to poor decision-making is foolish."

Chapter 3, The Ring of Truth, first paragraph, fourth and fifth sentences

"Only if a problem is consistent with our current beliefs about all boundless factors can we be reasonably certain that it is the best problem to solve. Only then can we say that the beliefs supporting our choice have the ring of Truth."

were changed to:

"Only if a problem is consistent with our current beliefs about all boundless factors can we be reasonably certain that it the beliefs supporting our choice have the ring of Truth."

Chapter 3, Refining Everyday Thinking, last two paragraphs

"This timeless concept of science provides us with a vision of how best to improve the process of refining everyday thinking.¹⁴ It also reminds us that the temporal results of this endless process are the truth rather than the Truth. Less obvious, it strongly suggests that the way that modern academics have divided human inquiry into disciplines is flawed. This is especially true in the way that they have grouped disciplines into the natural sciences, social sciences, and humanities.

"Fixing this modern scheme of grouping disciplines takes three simple steps. The first is to change the name of the social sciences to the *intelligent life sciences*. The *intelligent life sciences* would include all of the disciplines that directly concern the research program of, by, and for intelligent life. The next step is to subdivide this new group into the *ethical sciences*, *political sciences*, and *practical sciences*. The *ethical sciences* would refine our beliefs about the Good; the *political sciences* would refine our beliefs about Justice; and the *practical sciences* would refine our beliefs about Practical Wisdom. The last step is to change the name of the natural sciences to the *true sciences*. The *true sciences* would refine our beliefs about the Truth without concern for the Good, Justice, or Practical Wisdom. The humanities would continue to include all disciplines that concern the ring of Truth rather than the Truth per se. This new means of grouping disciplines comes closer than the modern scheme to carving nature at its joints."

"¹⁴ The belief that science ought to concern the results of refining everyday thinking (theories) rather than processes for refining everyday thinking (strategies for learning) tends to blind us to the best problems to solve. It does not take a theory to beat a theory. It takes an intellectual tool to beat an intellectual tool. The RTS strategy for learning beat the EOQ model's marginalist theory at helping us to find problems to solve."

were changed to:

"This timeless concept of science as the process of refining everyday thinking combines Einstein's insight into the everyday nature of science with the RTS/EOQ insight into deciding well. The universal research program of, by, and for intelligent life consists of both subordinate research programs and theories. Subordinate research programs help us to find problems to solve. Theories help us to solve given problems. For helping us to find problems to solve, it takes a research program to beat a research program. For helping us to solve given problems, it takes a theory to beat a theory. In

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general, it takes an intellectual tool to beat an intellectual tool. The RTS research program beat the EOQ theory at helping us to find problems to solve.

"This new concept of science provides us with a timeless means of organizing intellectual work into fields of study. Rather than grouping these fields into the *natural sciences*, the *social sciences*, and the *humanities*, it tells us that we ought to group them into the *true sciences*, the *intelligent life sciences*, and the *arts*. Like the natural sciences, the true sciences would include all fields that seek to refine our beliefs about the Truth without concern for the Good, Justice, or Practical Wisdom. Unlike the natural sciences, this group would not imply that the affairs of intelligent life are separate and distinct from nature.

"The intelligent life sciences would include all fields that seek to refine our beliefs about the Good, Justice, and Practical Wisdom. The *ethical sciences* refine our beliefs about the Good; the *political sciences* refine our beliefs about Justice; and the *practical sciences* refine our beliefs about Practical Wisdom. Unlike the social sciences, these sciences would embrace revering life well.

"The arts would include all fields that aim at the ring of Truth rather than the Truth per se. Like the humanities, this group would concern all of the boundless factors of deciding well. Unlike the humanities, it would not imply that humans are separate and distinct from other forms of intelligent life.¹⁴

"From the timeless view of believing well, this timeless way of grouping fields comes closer than the modern scheme to carving nature at its joints."

"¹⁴ This is not to say that history is nothing more than literature. History is literature constrained by historical facts and by the fashions of historians."

Chapter 4, The Explicit Experiment, second last paragraph

Changed "dissenting opinion of a decision" to "dissenting opinion in a decision" in the sixth sentence.

Chapter 4, Conclusion, last paragraph

Changed "Further, we ought" to "We also ought" in the third sentence.

"To do otherwise is to claim that we have found the Truth about Justice."

was deleted.

Appendix B, Einstein's Twin Warnings, last paragraph

Changed "Jesus as "the way, and the truth, and the life,"" to ""the way, and the truth, and the life" in terms of timeless science," and "follow the way, pursue the truth, and

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revere life" to "decide well, believe well, and revere life well" in the third to the last sentence.

Changes in Version 2008.04.14

Preface, fifth paragraph

Changed "Divine" to "divine" in all (4 occurrences).

Chapter 4, The Sovereign Story of Timeless Science, second paragraph, footnote

Changed "ever better" to "ever more wisely" in the third sentence.

Added the sentence: "This timeless story echoes Franklin's 1780 appeal to Joseph Priestley for a thousand year view of moral science."

Changes in Version 2008.04.21

The following were the result of advice from the ISCE editor (Osborn).

Acknowledgments, second, third, and fourth paragraphs

"I should like to acknowledge twelve people who helped me find the problems that led to this work. The first is Frederick Sontag, Pomona College's much beloved philosopher and theologian. For a third of a century Fred has encouraged me to become more than I am. In doing so, he has been extremely generous with his most precious resource, his time.

"The second is James Likens, the most openly reflective member of the Pomona economics faculty. Jim frequently told us that social scientists tell many stories about this or that complex phenomenon. He also told us that economists don't do dynamics well.

"The third is Gordon Douglass. My last semester at Pomona, I took an independent study course in human capital theory from Gordon. Understanding this material forced me to ponder methodology, an activity so dangerous to the emotional health of economists that George Stigler once joked that economists ought to leave it to the end of their careers. The more I ruminated, the more distraught I became. Despite the threat of failing to graduate, I could not produce the required term paper. I finally gave Gordon his paper, *Wealth in the Information Age, A Humanistic Approach to Economics*, seventeen years late."

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were appended to the first paragraph and changed to:

"I should like to acknowledge a dozen people who helped me find the problems that led to this work.

"The first three were Pomona College professors. Frederick Sontag pushed me never to stop becoming more than I am. For a third of a century Fred has been extremely generous with his most precious resource, his time. James Likens often told us that social scientists tell many stories about this or that complex phenomenon. Jim also told us that economists don't do dynamics well. Gordon Douglass exposed me to methodology, an activity so dangerous to the emotional health of economists that George Stigler once joked that economists ought to leave it to the end of their careers. My last semester in college I took an independent study course in human capital theory from Gordon. I could not get my mind around how a theory could be both useful (in predicting what will happen in markets) and foolish (in explaining what to do). The more I ruminated, the more distraught I became. Despite the threat of failing to graduate, I could not produce the required term paper. I finally gave Gordon his paper, "Wealth in the Information Age, A Humanistic Approach to Economics," seventeen years late."

Acknowledgments, new third paragraph

"The fourth through seventh are Stanford business school professors who helped me to understand the practical limits of analytical tools."

was changed to:

"The next four were professors at the Stanford business school."

Acknowledgments, new fourth paragraph

"The eighth is Taiichi Ohno, the Toyota manager who first imagined lean production. In the summer of 1984, I was head of information systems and human resources at Star Forms, a closely held business forms manufacturing company that for the preceding dozen years had average annual sales growth and return on equity rates of over thirty percent. We achieved this remarkable record by acting and learning faster than our competitors did. A lecture by Ohno-san convinced me that we had much to learn about learning."

was changed to:

"In the early 1980s, I was head of information systems and human resources at Star Forms, a closely held business forms manufacturing company. I believed that our firm owed its success to our ability to act and learn faster than others. A lecture by Taiichi Ohno in 1984 convinced me that we had much to learn about learning."

Acknowledgments, new fifth and sixth paragraphs

"The ninth is Howard Sherman, the Santa Fe Institute's "official unofficial philosopher" during the nineties. Howard weaned me from my belief in self-evident truth by introducing me to Albert Einstein's theory of knowledge.

"The tenth is W. Brian Arthur, an economist who values his search for useful truth more than his professional reputation. Brian and I have been discussing practical wisdom since the early nineties. In the late nineties, he suggested that I write a book "from the heart" for the Harvard Business Review / Economist magazine audience."

were changed to:

"In 1996, I joined the Santa Fe Institute's business network. Howard Sherman, SFI's "official unofficial philosopher of science," introduced me to Albert Einstein's theory of knowledge, thereby weaning me from my belief in self-evident truth. W. Brian Arthur, a scientist who values his search for useful truth more than his professional reputation, suggested that I write a book "from the heart" for the *Harvard Business Review/Economist* magazine audience."

Acknowledgments, new sixth paragraph

Deleted the first sentence: "The eleventh is Friedrich Hayek."

Changed "Hayek" to "Friedrich Hayek" in the new first sentence.

Acknowledgments, new seventh paragraph

Changed "The twelfth is my father, John Huntington Harris, who" to "Finally, there is my father, John Huntington Harris," in the first sentence.

Changed "such strange terms as 'paradigm' and 'recursionist economics." to "jargon." in the first sentence.

Preface, first paragraph

Changed "*Business, Government, and the Changing Environment*" to ""Business, Government, and the Changing Environment"" in the first sentence.

Preface, second paragraph

Changed "in assumptions" to "in with assumptions" in the first sentence.

Changed "I ought to have" to "Instead, I ought to have" in the second to last sentence.

Change Archive for 2008

Changed "I ought to have" to "Rather than a theory, I ought to have" in the last sentence.

Italicized "science" in the last sentence.

Preface, fifth paragraph

Changed "it is useful" to "we owe it to ourselves" in the third sentence.

Deleted the seventh sentence: "In the pursuit of living well, we owe it to ourselves to distinguish between theology, religion, and faith."

Preface, sixth paragraph

Added the sentence: "As we shall see, a prime example of scientific dogma is the belief that excellence in means is efficiency."

Preface, seventh paragraph

Changed "science ought to be" to "we ought to define science to be" in the second sentence.

Preface, ninth paragraph

Changed "downside" to "disadvantage" in the third sentence.

Italicized "*pi*" in the fourth sentence.

Chapter 1, Setting Words Aright, first paragraph

Italicized "Concepts" in the first sentence.

Chapter 1, Setting Words Aright, second paragraph

Italicized "Knowledge resources" in the second sentence.

Changed "place into use," to "put into use;" in the third sentence.

Chapter 1, Setting Words Aright, third paragraph, second footnote

Changed "X" to "10" in the last sentence.

Chapter 1, Excellence in Means, second paragraph

Changed "one hundred thousand" to "100,000" in all (3 occurrences).

Change Archive for 2008

Changed "uses" to "it uses" in the third sentence.

Chapter 1, Excellence in Means, fifth paragraph

Changed "setups" to "setup times" in the third sentence.

Chapter 1, Excellence in Means, eighth paragraph

Changed "ever better" to "in ever better ways" in the second sentence.

Changed "high definition" to "high-definition" in the second sentence of the footnote.

Chapter 1, Excellence in Means, ninth paragraph

Changed "the temporal end" to "a temporal end" in the second sentence.

Chapter 1, Excellence in Means, tenth paragraph

Changed "on solely on" to "solely on" in the second sentence.

Chapter 1, Excellence in Means, eleventh paragraph

Changed "on both what we know and what" to "both on what we know and on what" in the second sentence.

Chapter 1, Deciding Well, third paragraph

Changed "knowledge in use," to "knowledge-in-use;" in the first sentence.

Changed "dot.com" to "dot-com" in the second sentence.

Chapter 2, Introduction, second paragraph

"Deciding to live well is a matter of using timeless tools (concepts, models, etc.) to help us to find temporal problems to solve and temporal tools to help us to solve these problems. We owe it to ourselves to plan our lives using timeless tools and work our plans using temporal ones. In planning terms, we ought to plan our lives using strategic tools and work our plans using tactical ones."

was changed to:

"Let us consider living well from the temporal view of deciding well. We live well by using intellectual tools (concepts, models, etc.) to help us to find and solve problems. A common saying tells us simply to "plan our work and work our plan."

Change Archive for 2008

"Now let us consider living well from the timeless view of deciding well. We live well by using timeless tools to help us find problems to solve and temporal tools to help us to solve these problems. We owe it to ourselves to plan our lives using timeless tools and to work our plans using temporal ones. We need both timeless and temporal tools. In planning terms, we need strategic tools to help us plan our lives and tactical tools to help us work our strategic plans."

Chapter 2, Wealth, first paragraph

"Wealth is what we need to achieve our ends. Temporal wealth is what we need to satisfy our wants. Timeless wealth is what we need to live well."

was changed to:

"In general, wealth is what we need to achieve our ends. From the temporal view of living well, wealth is what we need to live well based on what we currently know. Hence, temporal wealth is what we need to achieve what we currently want. From the timeless view of living well, wealth is what we need to live well based on all that can be known. Hence, timeless wealth is what we need to live well."

Chapter 2, Pleasure and Joy, second and third paragraphs

"There are two sorts of pleasure. The first is the pleasure that we derive directly from an activity. The second is the pleasure that is the result of an activity. We can think of the first as pleasure-in-acting and the second as pleasure-in-being. Eating junk food yields pleasure-in-acting; eating healthy food yields pleasure-in-being. We commonly refer to pleasure-in-acting as "pleasure" and pleasure-in-being as "joy."

"In Western ethics, Aristotle defined pleasure as losing ourselves in activity.² To give us pleasure, an activity must not be too easy or too hard. Work that does not challenge us is boring. Work that challenges us too much is overwhelming. Between these extremes is a level that enables us to lose ourselves in activity. Pain-in-acting is anything that hinders losing ourselves in activity."

were changed to:

"There are two sorts of pleasure. The first is the pleasure that comes from totally involving or immersing ourselves in activity. Aristotle defined this type of pleasure as losing ourselves in activity.² Surfers call this total involvement. To give us this type of pleasure, an activity must not be too easy or too hard. Activity that does not challenge us is boring. Activity that challenges us too much is overwhelming. Between these extremes is a level that enables us to lose ourselves in activity. We may call this type of pleasure, this losing ourselves in activity, *pleasure-in-acting*. Following this logic, we may also call anything that hinders our losing ourselves in activity *pain-in-acting*."

Chapter 2, *Pleasure and Joy*, new third paragraph

Change Archive for 2008

Changed "hinders losing ourselves" to "hinders our losing ourselves" in the third and last sentences.

Chapter 2, Pleasure and Joy, new fifth paragraph

"Finding pleasure in an activity may call for investing time and money in training. Finding pleasure in playing chess calls for investing in knowledge of how to play chess. Finding pleasure in swimming calls for investing in the ability to swim well."

was changed to:

"Finding pleasure in an activity may call for us to invest time and money in training. Finding pleasure in playing chess calls for an investment in knowledge of how to play chess. Finding pleasure in swimming calls for an investment in the ability to swim well."

Chapter 2, Pleasure and Joy, last paragraph

"Seventeenth century philosopher Baruch Spinoza defined joy as the transition from a lesser to a greater perfection.² Joy ranges from relief to bliss. Relief is the state that arises from satisfying our basic needs; contentment is the state that arises from satisfying our higher needs; and bliss is the ideal state that arises from satisfying all our needs. Pain-in-being is a matter of failing to satisfy needs."

was changed to:

"The second type of pleasure is pleasure that is the product of acting. This is the pleasure of simply being. Baruch Spinoza defined this type of pleasure as the transition from a lesser to a greater perfection.² This type of pleasure, which we may call *pleasure-in-being*, ranges from relief to bliss. Relief is the state that arises from satisfying our basic needs; contentment is the state that arises from satisfying our higher needs; and bliss is the ideal state that arises from satisfying all our needs. Following this logic, we may call the condition that arises from failing to satisfy our needs *pain-in-being*.

"We commonly refer to pleasure-in-acting as "pleasure" and pleasure-in-being as "joy." Using these common terms, losing ourselves in a good activity yields pleasure and joy. Similarly, losing ourselves in a bad activity yields only pleasure."

Chapter 2, Practical Wisdom, first paragraph

Changed "the right things" to "those things that we need to live well" in the fourth sentence.

Changed "choose subordinate ends and the best means to them" to "satisfy our wants" in the fourth sentence.

Chapter 2, Practical Wisdom, last paragraph

Changed "means" to "ways" in the first and last sentences.

Changed "(rules of thumb / heuristic methods)" to "(rules of thumb/heuristic methods)" in the fourth sentence.

Merged first two sentences using a colon.

Chapter 2, Two Means of Living Well, last paragraph

Changed "the seven deadly sins" to "Dante's seven deadly sins (lust, gluttony, greed, sloth, wrath, envy, and pride)" in the last sentence.

Chapter 2, Alternatives to Living Well, first two paragraphs

"The two major alternatives to pursuing the virtuous circle of pleasure and joy are pursuing pleasure and pursuing nothing. Those who pursue pleasure too often choose to mask pain-in-being with pleasure, which breaks the virtuous circle of pleasure and joy. Their pursuit of pleasure makes them vulnerable to mindlessly masking the pain of an unmet need with the pleasure of an activity that fails to satisfy the unmet need.

"Those who pursue nothing either pursue oblivion or mindlessly follow their traditions or leaders. They seldom consider whether their actions are wise. They are the most likely to fall into the cycle of poverty."

were changed to:

"Some people pursue pleasure alone rather than the virtuous circle of pleasure and joy. When choosing to act, they consider only that an activity yields pleasure, not that it satisfies an unmet need. This makes them vulnerable to falling into the habit of masking the pain of an unmet need with the pleasure of an activity that fails to satisfy that unmet need. In short, it makes them vulnerable to acting compulsively.

"Other people pursue nothing. They seldom consider whether the activities they choose are good or bad. This makes them the most likely to fall into the vicious cycle of poor decision-making and deprivation, which we commonly call poverty."

Chapter 2, Alternatives to Living Well, last paragraph

Italicized "yin" and "yang" in all (2 occurrences each).

Changed "/" to "/" in all (2 occurrences).

Chapter 2, Human Capital, Work, and Leisure, first paragraph

Change Archive for 2008

Changed "trading-off" to "trading off" in the last sentence.

Chapter 2, Trade, first paragraph

Changed "transactions but also" to "transactions, but also" in the fourth sentence.

Changed "paper," to "paper" in the first sentence of the footnote.

Chapter 2, Trust, second paragraph

Changed "than non-knowledge assets" to "than are non-knowledge assets" in the second sentence.

Chapter 2, Three Mistakes

Changed "improving trade" to "the improvement of trade" in the first sentence of the first paragraph.

Changed "cannot improve" to "cannot in fact improve" in the second sentence of the first paragraph.

Changed "the good's quality" to "a good's quality" in the first sentence of the second paragraph.

Changed "We" to "However, we" in the second sentence of the second paragraph.

Changed "twentieth century" to "twentieth-century" in the fifth sentence of the last paragraph.

Chapter 2, Production, first paragraph

Changed "how better to build products" to "how to build products better" in the last sentence.

Chapter 2, Profit, first paragraph, first sentence

"Profit is the expected return on practical wisdom."

was changed to:

"From a temporal view, profit is the actual return on a decision. From a timeless view, profit is the expected return on deciding well."

Chapter 2, Profit, first paragraph, footnote

Change Archive for 2008

Changed "ten dollars" to "10 dollars" and "a thousand dollars" to "500 dollars" in all (2 occurrences of each).

Changes in Version 2008.04.22

The following were the result of advice from the ISCE editor (Osborn).

Chapter 3, Introduction, second paragraph

Changed "Eighteenth century" to "Eighteenth-century" and "timeless end" to "a timeless end" in the first sentence.

Changed "that we generalize" to "in which we generalize" in the second sentence.

Changed "examine" to "have examined" in the third sentence.

Chapter 3, Introduction, second paragraph

Changed "Nineteenth century" to "Nineteenth-century" and "real world" to "realworld" in the first sentence.

Changed "are" to "were" in the third sentence.

Chapter 3, Introduction, third paragraph, footnote, first sentence

"W. V. O. Quine formally explained the difficulties the blurring of the distinction between statements within a system of concepts and changes to a system of concepts creates in his 1951 paper, *Two Dogma's of Empiricism*."

was changed to:

"W. V. O. Quine formally explained the difficulties created by the blurring of the distinction between statements within a system of concepts and changes to a system of concepts in his 1951 paper, "Two Dogmas of Empiricism.""

Chapter 3, Introduction, fourth paragraph

Changed "Twentieth century" to "Twentieth-century" and "that we respond" to "in which we respond" in the first sentence.

Changed "chapter X" to "chapter 10" in the footnote.

Chapter 3, Introduction, ninth paragraph

Change Archive for 2008

Changed "that we should value" to "we should value" in second sentence.

Chapter 3, Introduction, tenth paragraph

Changed "at the core" to "that is at the core" in last sentence.

Chapter 3, Introduction, thirteenth paragraph

Changed "hinders deciding well" to "hinders us from deciding well" in fourth and fifth sentences.

Changed "knowledge of how to decide well" to "of this knowledge" in last sentence.

Chapter 3, Introduction, sixteenth paragraph

Changed "how treating others well helps us to pursue the Good and the Truth" to "this" in second sentence.

Changed "find ourselves" to "are" in last sentence.

Chapter 3, Introduction, seventeenth paragraph

Changed "Twentieth century" to "Twentieth-century" in the first sentence.

Changed "Rawls" to "He" in the second sentence.

Changed "to satisfy" to "satisfy" in the first sentence of the last footnote.

Chapter 3, Introduction, last paragraph

Changed "cooperating" to "cooperation" in the second sentence.

Chapter 3, The Ring of Truth, second paragraph

Changed "Ode on a Grecian Urn" to ""Ode on a Grecian Urn"" in the first sentence.

Chapter 3, The Ring of Truth, last paragraph

Changed "beauty" to "Beauty" in the first sentence.

Changed "is" to "is" in the sixth sentence.

Chapter 3, Refining Everyday Thinking, third paragraph

Changed "long term" to "long-term" in the sixth sentence of the first footnote.

Chapter 3, Refining Everyday Thinking, fourth paragraph, footnote

Removed quotations around "weed out" in the first and second sentences.

Italicized "applications" in the second sentence.

Chapter 3, Refining Everyday Thinking, fifth paragraph

Changed "appear to us to be simple" to "appear simple" in the first sentence.

Changed "predict" to "predict them" in the second sentence.

Changed "knowledge in use" to "knowledge-in-use" in the last sentence.

Chapter 3, Refining Everyday Thinking, seventh paragraph

Changed "beat" to "beats" in the last sentence.

Chapter 3, Refining Practical Wisdom, last paragraph

Changed "stories" to "the stories" in the fifth sentence.

Changed "help us to find problems to solve, not to help us to predict" to "help us find problems to solve, not to help us predict" in the last sentence.

Changed "/" to "/" in the second footnote (2 occurrences).

Chapter 3, Refining Practical Stories, first paragraph

Changed "to predict" to "predict" in the fourth sentence.

Chapter 3, Refining Practical Stories, second paragraph

Changed "to find" to "find" in the fourth sentence.

Chapter 3, Refining Practical Stories, third paragraph

Changed "to be" to "as" in the third sentence.

Changed "knowledge in use" to "knowledge-in-use" in the fourth sentence.

Changed "THE" to "The" in the Adam Smith quote in the footnote.

Chapter 3, Refining Practical Stories, fourth paragraph

Change Archive for 2008

Changed "genetic level" to "genetic-level" and "higher level" to "higher-level" in the first two sentences of the third footnote.

Changed "mystically link" to "link mystically" in the third sentence of the last footnote.

Chapter 3, Trading Failures, first paragraph

Changed "flow" to "this flow" and "uneven flow" to "the uneven flow" in the second sentence.

Changed "flow" to "the flow" in the third sentence.

Changed "coverage" to "coverage," in the second to last sentence.

Chapter 3, Recursive Failures, first paragraph

Changed "that we conceive" to "we conceive" and "that we see" to "we see" in the third sentence of the footnote.

Chapter 3, Recursive Failures, last paragraph

Changed "our current national income accounting system" to "the modern economic national accounting system" in the footnote.

Chapter 3, Computer Models, first paragraph

Changed "knowledge in use" to "knowledge-in-use" in the last sentence.

Changed "Gaussian" to "a Gaussian" and "most resulting" to "the resulting" in the second sentence of the footnote.

Removed italics from "A Focus on Exceptions that Prove the Rule" and changed "reprinted" to "reproduced" in the last sentence of the footnote.

Chapter 3, Computer Models, second paragraph

Changed "Agent based" to "Agent-based" in the first sentence.

"The best way to avoid debacles is to prevent embacles, the piling up of stress."

was changed to:

"The best way to avoid a debacle, the sudden release of a large amount of stress, is to prevent embacles, the piling up of frozen accidents under stress."

Chapter 3, A Crude Look at the Whole, first paragraph

Changed "fewer resources" to "with fewer resources" in the second sentence.

Chapter 3, A Crude Look at the Whole, second paragraph

Changed "to identify" to "identify" in the second sentence.

Chapter 3, A Crude Look at the Whole, last paragraph

Changed "retard progress" to "retard progress toward the timeless end of revering life well" in the third sentence.

Deleted the sentence: "Retarding progress robs the whole of life of a better future."

Chapter 3, A Tale of Revolutions, last paragraph, footnote

Changed "knows" to "would know" in the third sentence.

Chapter 3, Conclusion, second paragraph

Changed "that" to "in which" (2 occurrences) and "tend" to "do tend" in the second to last sentence.

Chapter 4, Sovereignty, second paragraph

Changed "permanently," to "permanently;" in the last sentence.

Chapter 4, Sovereignty, third paragraph

Changed "good will" to "goodwill" in the second sentence (3 occurrences).

Changed "needed" to "required" in the third sentence.

Chapter 4, Sovereignty, last paragraph

Added "—" to the second sentence (2 occurrences).

Chapter 4, *The Explicit Experiment*, first paragraph

Changed "--" to " — " in the Declaration quote (2 occurrences).

Chapter 4, *The Explicit Experiment*, third paragraph

Changed "--" to "—" in the Gettysburg Address quote (6 occurrences).

Chapter 4, The Explicit Experiment, fourth paragraph

Added quotation marks to the First Amendment quote in the Word version.

Chapter 4, The Explicit Experiment, last paragraph, footnote

Changed "social justice inspired" to "social justice-inspired" in the second sentence.

Changed "Christianity inspired" to "Christianity-inspired" in the fourth sentence.

Changed "thirties" to "1930s" and "forties" to "1940s" in the last sentence.

Chapter 4, *Tax Well*, first paragraph

Changed "as how" to "as to how" in the second sentence.

Changed "is never" to "would never be" in the last sentence.

Chapter 4, Lower Trade Barriers, first paragraph, last sentence

"Nothing is more useful to a person than is another person guided by wisdom."

was changed to:

"Nothing is more useful to a person than a person who pursues Wisdom.¹³"

"¹³ Compare this to Proposition 35, Corollary 1 of the fourth book of Spinoza's *Ethics*: There is no individual thing in nature, which is more useful to man, than a man who lives in obedience to reason."

Chapter 4, Control the Money Supply Passively, first paragraph, footnote

Changed "power," to "power:" in the fourth sentence.

Chapter 4, Promote Practical Science, first paragraph

Changed "Further" to "Furthermore" in the second sentence.

Chapter 4, Promote Savings for Welfare, third paragraph

Changed "government run" to "government-run" in the first sentence.

Changed "dependents" to the more universal variant "dependants" in the fourth sentence.

Changed "does" to "do" in the last sentence of the last footnote.

Change Archive for 2008

Afterword, first paragraph

Changed "that" to "in which" in the second sentence.

Afterword, second paragraph

Changed "it was their" to "that it was their" in the second and third sentences.

Afterword, third paragraph

Changed "safety—" to "safety:" in the last sentence.

Afterword, last paragraph

Changed "I am" to "Thus, I am" and "that" to "in which" in the first sentence.

Appendix A, title

Changed double quotes to single quotes.

Appendix A, first paragraph

Italicized "*kaizen*" in the fourth sentence.

Appendix A, last paragraph

Changed ", Flatland, characters performed" to "Flatland, characters perform" in the first sentence.

Appendix B, Introduction, first paragraph

Changed "major problem" to "main problem" in the first sentence.

Appendix B, Schweitzer's Universal Spiritual Need, third paragraph, third sentence

"Cultures that adopt this must add an ethical system to govern worldly affairs."

was deleted.

Appendix B, Schweitzer's Universal Spiritual Need, fourth paragraph, first footnote

Italicized "*karma*" and "*dharma*" in the first sentence.

Appendix B, Schweitzer's Universal Spiritual Need, last paragraph

Change Archive for 2008

Changed "slow evolution" to "a slow evolution" and "in Indian" to "in both Indian" in the first sentence.

Changed "slow evolution" to "a slow evolution" in the second sentence.

Appendix B, Practical Benefits of Magical Mysticism, last paragraph

Changed "Archimedes's" to "Archimedes" in the second sentence.

Appendix B, Heroic Death, second paragraph

Changed "amount" to "amount of willingness" in the last sentence.

Appendix B, *Heroic Death*, last paragraph

Removed italics from the last sentence: "Those who ritualize heroic death are either fools or knaves."

Appendix B, Einstein's Twin Warnings, first paragraph

Changed "to mystically link or relink" to "to link or relink mystically" in the second sentence.

Changed "refining everyday thinking" to "the endless process of refining everyday thinking" in the second sentence.

Removed italics from the last sentence: "Atheists ought to heed Einstein's warning, "Science without religion is lame.""

Appendix B, Einstein's Twin Warnings, second paragraph

Added quotation marks to the two New Testament passages.

Removed italics from the last sentence: "Theists ought to heed Einstein's warning, "Religion without science is blind.""

Appendix C, Folding in Processes, third paragraph

Changed "twenty-four identical wheel bolt" to "24 identical wheel-bolt" in the last sentence.

Appendix C, Folding in Processes, ninth paragraph

Changed "time" to "of their time" in the second sentence.

Changed "Decision related" to "Decision-related" in the last sentence.

Appendix C, Smoothing Flows, first paragraph

Changed "smooth flow" to "this smooth flow" in the fourth sentence.

Changed "the result of the smoothing process" to "this smooth flow" in the last sentence.

Appendix C, Temporal Details, first paragraph

Changed "nineteen eighties" to "1980s" in the last sentence.

Changed "Tokyo based" to "Tokyo-based" in the first sentence.

Changed "Quality Circles," to "Quality Circles;" in the second sentence.

Appendix C, *Machine Tools*, second paragraph

Changed "industrial age" to "industrial-age" in the first sentence.

Changed "knowledge age" to "knowledge-age" in the third and fifth sentences.

Changed "they try" to "it tries" in the sixth sentence.

Appendix C, *Machine Tools*, fourth paragraph

Changed "The human centered" to "This human-centered" in the first sentence.

Removed italics from and added quotation marks to "automation with a human touch" in the second sentence.

Italicized "ninben no tsuita jidoka" in the second sentence.

Appendix C, Machine Tools, fifth paragraph

Removed italics from and added quotation marks to "fool-proofing" in the second sentence.

Italicized "baka-yoka" in the second sentence.

Appendix C, Production Links, first paragraph

Changed "in to" to "into" in the second sentence.

Appendix C, Production Links, second paragraph

Change Archive for 2008

Changed "consuming work center" to "the consuming work center" in the second sentence.

Changed "batch size" to "the batch size" in the third sentence.

Appendix C, *Production Links*, third paragraph

Restored the missing footnote in the Word version, which had an HTML link to a footnote rather than an actual footnote.

Appendix C, Production Links, last paragraph

Changed "out of balance" to "out-of-balance" in the second sentence.

Appendix C, Inducing Knowledge, first paragraph

Changed "eighties" to "1980s" in the second sentence.

Appendix D, first paragraph

Changed "choose" to "decide" in the second sentence.

Appendix D, second paragraph

Changed "measuring" to "how to measure" in the first sentence.

Appendix D, last paragraph

Changed "the same as" to "similar to" in the fifth sentence.

Changes in Version 2008.04.30

Acknowledgments, fifth paragraph

"In 1996, I joined the Santa Fe Institute's business network."

was changed to:

"The next two were seekers of larger truths who I met at the Santa Fe Institute."

Changed "philosopher of science," to "philosopher of science" during the 1990s," in the second sentence.

Change Archive for 2008

Changed "a scientist" to "an economist" in the last sentence.

Preface, last paragraph, end

Added the paragraph:

"Pursuing timeless ends well calls for distinguishing between terms and concepts. I use the linguistic convention of surrounding terms with single quotation marks and concepts with double quotation marks. For example, the term 'wealth' may denote either the temporal concept of "what we need to satisfy our wants" or the timeless concept of "what we need to live well." Similarly, the term 'knowledge resources' may denote either the temporal concept of "useful skills and expertise" or the timeless concept of "useful patterns of energy, matter, space, and time." In pursuing timeless ends well, we need temporal concepts to solve temporal problems and timeless concepts to choose temporal problems to solve."

Chapter 1, Excellence in Means, last paragraph, footnote

Changed "subordinate problem" to "temporal problem" in the first and third sentences.

Changed "a problem scale" to "a temporal problem scale" in the last sentence.

Chapter 1, Two Views of Deciding Well, last paragraph, last sentence

Added the footnote:

"⁸ Note that the distinction between the temporal and timeless views of deciding well concerns the distinction between efficiency and the combination of efficiency and effectiveness. Unlike the distinction between efficiency and effectiveness, this distinction is independent of our choice of a temporal problem to solve. Just as we can never choose the largest number, we can never choose a temporal problem so large that it eliminates the distinction between the temporal and timeless views of deciding well."

Chapter 2, Introduction, second paragraph

Changed "saying" to "maxim" in the last sentence.

Changed "our" to "your" in the last sentence (2 occurrences).

Chapter 2, *Pleasure and Pain*, last paragraph

"We commonly refer to pleasure-in-acting as "pleasure" and pleasure-in-being as "joy." Using these common terms, losing ourselves in a good activity yields pleasure and joy. Similarly, losing ourselves in a bad activity yields only pleasure."

was changed to:

"We commonly use the term 'pleasure' to mean pleasure-in-acting and the term 'joy' to mean pleasure-in-being. Using these common terms, losing ourselves in a good activity yields pleasure and joy, and losing ourselves in a bad activity yields only pleasure."

Chapter 2, Profit, footnote

Changed "Investing 10 dollars in a risky venture" to "Paying \$10 for a lottery ticket" and "500 dollars" to "\$100" in the second sentence.

Changed "investing 500 dollars in a risky venture" to "Paying \$100 for a lottery ticket" and "10 dollars" to "\$10" in the third sentence.

Chapter 3, Refining Everyday Thinking, last paragraph

Changed "timeless view of believing well, this timeless way" to "view of timeless science, this way" in the first sentence.

Chapter 3, Refining Practical Stories, third paragraph, second to the last sentence

"The modern concept of wealth¹⁸ is much better than this concept."

"¹⁸ In the opening sentence of *Wealth*, Smith speaks of nations working to provide the things that their people consume: "The annual labour of every nation is the fund which originally supplies it with all the necessaries and conveniences of life which it annually consumes...." From the temporal view of modern economics, this is a positive statement about what nations do. From the timeless view of this work, it is an explanatory statement. We use explanatory statements to guide our actions, to help us to find problems to solve. Smith, Adam, *An Inquiry into the Nature and Causes of the Wealth of Nations*, (Edinburgh: 1776), reprinted in Project Gutenberg, <<u>http://www.gutenberg.org/catalog</u>>, (18 February 2008)."

was changed to:

"The modern economic concept of wealth is much better than this concept."

Chapter 3, A Tale of Revolutions, first paragraph, first sentence, footnote

Changed "book 1, chapter 1" to "(Edinburgh: 1776), book 1, chapter 1, reprinted in Project Gutenberg, <<u>http://www.gutenberg.org/catalog</u>>, (30 April 2008)" in the first sentence.

Chapter 3, A Tale of Revolutions, second paragraph, last sentence

Added the footnote:

"²⁹ This is not to say that Adam Smith did not consider moral philosophy, which he famously did in *The Theory of Moral Sentiments*. It is only to say that Smith based his economics on how we please ourselves rather than on how we decide well."

Changes in Version 2008.05.07

Acknowledgments, second paragraph

Changed "don't" to "do not" in the fifth sentence.

Acknowledgments, third paragraph

Changed "business school" to "Graduate School of Business" in the first sentence.

Preface, second paragraph

Changed "a theory," to "a theory of moral philosophy," in the last sentence.

Preface, fourth paragraph

Changed "modern Western belief" to "modern belief" in the first sentence.

Changed "modern belief in his definition of philosophy, which he used to introduce" to "belief in the introduction to" in the second sentence.

Preface, fifth paragraph

Changed "or pursuing" to "or atheists pursuing" in the second to last sentence.

Changed "ought" to "ought (owe it to ourselves)" in the last sentence.

Chapter 3, Introduction, third paragraph

Changed "Stewart" to "Stuart" in the first sentence.

Chapter 3, Introduction, fourth paragraph

Changed "established empirical facts" to "our beliefs" in the first sentence.

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Changed "is more complex than Mill's "black swan" example leads us to believe it to be" to "concerns not only our beliefs but also the concepts underlying our beliefs" in the last sentence.

Chapter 3, Introduction, fourth paragraph, last sentence, footnote

"W. V. O. Quine formally explained the difficulties created by the blurring of the distinction between statements within a system of concepts and changes to a system of concepts in his 1951 paper, "Two Dogmas of Empiricism." What follows in this section confirms Quine's prescription for a holistic approach to meaning. With one major caveat, it also confirms Quine's belief that "Philosophy of science is philosophy enough." This caveat is that we define science as the timeless process of refining everyday thinking."

was changed to:

"Allowing for experience to change our system of concepts blurs the distinction between truths grounded in reason (means independent of fact) and truths grounded in fact. Philosophers will recognize this the analytic versus synthetic truth problem, which is the first of W. V. O. Quine's two dogmas of empiricism. See Quine, W. V. O, "Two Dogmas of Empiricism," *The Philosophical Review* Vol. 60, No. 1 (Jan., 1951) pp. 20-43. Reprinted in Quine, W. V. O., *From a Logical Point of View*, (Harvard University Press, 1953; second, revised edition 1961)."

Chapter 3, Introduction, eighth paragraph

Changed "raises a single question, which is" to "calls for us to ask" in the first sentence.

Chapter 3, Introduction, ninth paragraph, last sentence, footnote

"The primary source of this essential description of modern liberalism is John Dewey, who partially reconciled the pragmatic philosophies of Charles S. Pierce and William James with the idealistic philosophy of George Hegel."

was changed to:

"The primary source of this essential description of modern liberalism is John Dewey, who cooked German idealism and American pragmatism into a democratic socialist stew."

Chapter 3, Introduction, eleventh paragraph

Changed "he called wisdom, first philosophy, and theology" to "he variously called wisdom, first philosophy, or theology" in the second to last sentence.

Chapter 3, Introduction, twelfth paragraph, end

Added the footnote:

"⁶ We can imagine (1) an infinitely large problem that contains all other problems, (2) a means of solving this universal problem, and (3) a means of improving the means of solving this universal problem. Part of the means of improving the means of solving this universal problem (3) is refining our beliefs about (1), (2), and (3). We may call this endless process of refining our beliefs about (1), (2), and (3) "science." We may also call this means of defining science "boundless pragmatism." Note that this holistic definition of science reconciles W. V. O. Quine's belief that philosophy of science is philosophy enough with Morton White's apparently contradictory belief that philosophy ought to include the whole of human experience."

Chapter 3, Refining Everyday Thinking, ninth paragraph

Changed "these sciences would embrace revering life well" to "the intellectual life sciences would embrace the timeless end of revering life well" in the last sentence.

Chapter 3, Refining Practical Wisdom, second paragraph, second footnote

Changed "timeless view of science" to "view of timeless science" in the fifth sentence.

Chapter 4, The Explicit Experiment, second paragraph

Changed "timeless view of science" to "view of timeless science" in the fifth sentence.

Chapter 4, The Sovereign Story of Timeless Science, second paragraph, footnote

"The sovereign story of timeless science is simply a refinement of Franklin's sovereign story of moral science. The Declaration of Independence, as interpreted by philosopher Mortimer Adler, calls for us to pursue happiness justly, where happiness is the timeless end of living well. The sovereign story of timeless science calls for us to pursue happiness justly *ever more wisely*. This timeless story echoes Franklin's 1780 appeal to Joseph Priestley for a thousand year view of moral science. For more on Adler's interpretation of the Declaration, see his book, *We Hold These Truths* (New York, Macmillan Publishing Company, 1987)."

was changed to:

"Arguably, the sovereign story of timeless science is nothing more than a refinement of the sovereign story of the Declaration of Independence. In his book *We Hold These Truths* (New York, Macmillan Publishing Company, 1987), Mortimer Adler argues that the Preamble of the Declaration calls for us to pursue happiness justly, where happiness is the timeless end of living well. In contrast, the sovereign story of timeless science calls for us to pursue happiness justly *ever better*. This is timeless story is

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closer to Franklin's 1780 appeal to Joseph Priestley for a boundless moral science than is Adler's less complete timeless story."

Chapter 4, Conclusion

"From the timeless view of deciding well, governing well is a matter of helping all of us to decide well. Until we choose our governments by how well they govern, we will not get governments that foster knowledge useful in deciding well. We will not get governments that foster the better angels of our nature.

"In a larger sense, governing well is a matter of testing our beliefs about Justice. We ought to ensure that our experiment is properly run, which is to say that our sovereign rights story is clear and that our laws, habits, customs, and actions conform to it. We also ought to encourage rival experiments in revering life well. To do otherwise is to deny our role as researchers in the research program of, by, and for intelligent life."

was changed to:

"From the timeless view of deciding well, we owe it to ourselves to embrace our role as researchers in the research program of, by, and for intelligent life. We ought to ensure that our experiments in governance are properly run, which is to say that our sovereign rights stories are clear and that our laws, habits, customs, and actions conform to them. We also ought to encourage rival experiments in revering life well. To do otherwise is to deny our proper role in the flourishing of life.

"Governing well is a matter of helping all of us decide well. Until we choose our governments by how well they govern, we will not get governments that foster knowledge useful in deciding well. We will not get governments that foster the better angels of our nature."

Changes in Version 2008.05.10

Preface, fourth paragraph

Changed "modern Western belief" to "modern belief" in the first sentence.

Changed "modern belief in his definition of philosophy, which he used to introduce" to "belief in the introduction to" in the second sentence.

Preface, fifth paragraph

Changed "ought (owe it to ourselves)" back to "ought" in the last sentence.

Chapter 1, Excellence in Means, last paragraph

Changed "problems" to "temporal problems" in the sixth sentence.

Chapter 1, Two Views of Deciding Well, first paragraph

Changed "Our" to "Further, our" in the fourth sentence.

Deleted the last sentence: "Modern economists call people who act in this way "rational.""

Chapter 1, Two Views of Deciding Well, last paragraph, last sentence

"We commonly call people who act in this way "wise.""

was made into a separate paragraph and changed to:

"Modern economists call people who act according to the temporal view of deciding well "rational." In contrast, we commonly call people who act according to the timeless view "wise."⁸"

Chapter 2, Introduction, second and third paragraphs

"Let us consider living well from the temporal view of deciding well. We live well by using intellectual tools (concepts, models, etc.) to help us to find and solve problems. A common maxim tells us simply to "plan your work and work your plan."

"Now let us consider living well from the timeless view of deciding well. We live well by using timeless tools to help us find problems to solve and temporal tools to help us to solve these problems. We owe it to ourselves to plan our lives using timeless tools and to work our plans using temporal ones. We need both timeless and temporal tools. In planning terms, we need strategic tools to help us plan our lives and tactical tools to help us work our strategic plans."

were changed to:

"From the temporal view of deciding well, we live well by using intellectual tools (concepts, models, etc.) to help us find and solve problems. A common maxim tells us simply to "plan your work and work your plan." In contrast, from the timeless view of deciding well, we live well by using timeless tools to help us find temporal problems to solve and temporal tools to help us solve temporal problems. We plan our lives using timeless tools and to work our plans using temporal ones. In planning terms, we plan our lives using strategic tools and work our plans using tactical tools."

Chapter 2, Introduction, last paragraphs

Changed "given problems" to "temporal problems" in the first sentence.

Chapter 2, Wealth, first paragraph

Changed "temporal wealth" to "the temporal concept of wealth" in the third sentence.

Changed "timeless wealth" to "the timeless concept of wealth" in the fifth sentence.

Chapter 3, Introduction, second paragraph

Inserted the heading "The Curious End of Believing Well."

Chapter 3, The Elephant in the Room, first paragraph

Changed "philosophical terms" to "other words" in the last sentence.

Chapter 3, The Elephant in the Room, last paragraph

Changed "assumptions about the creation of the Universe, our instincts, and our abilities" to "assumptions" in the last sentence.

Chapter 3, Recursive Failures, first paragraph, footnote

Changed "change the world for the better" to "change the world" in the third sentence.

Chapter 4, *The Sovereign Story of Timeless Science*, second paragraph, footnote, last sentence

"This is timeless story is closer to Franklin's 1780 appeal to Joseph Priestley for a boundless moral science than is Adler's less complete timeless story."

was deleted.

Chapter 4, Tax Well, first paragraph, last two sentences

"The people who pay taxes are often not the people who bear the burden of them. A tax on practical wisdom would never be wise."

were changed to:

"Taxes on practical wisdom, which is to say taxes on profit, are never wise."

Chapter 4, Promote Savings for Welfare, last paragraph

"Policymakers might combine (1) a government-run safety net program, (2) a highly progressive personal income tax system, and (3) a tax-exempt universal welfare savings account program. The safety net program would ensure that all of us have what we need to decide well. The welfare savings account would allow income tax-

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free withdrawals for qualified welfare expenses. These expenses would include retirement, medical, unemployment, and educational expenses for the owners of the account and their dependants. They would also include unlimited giving to private charities.¹⁵ The government would tax all other income as consumption. The haves as well as the have-nots ought to decide well.¹⁶"

were changed to:

"Policymakers might combine (1) a government-run safety net program, (2) a highly progressive consumption tax system, and (3) a consumption tax-exempt universal welfare savings account program. The safety net program would ensure that all of us have what we need to decide well. The government would tax all income as consumption. The universal welfare savings account would allow consumption tax-free withdrawals for qualified welfare expenses. These expenses would include retirement, medical, unemployment, and educational expenses for the owners of the account and their dependants. They would also include unlimited giving to private charities.¹⁵ The haves as well as the have-nots ought to decide well.¹⁶"

Changes in Version 2008.05.15

All

Changed title of essay from "The Science of Practical Wisdom" to "Boundless Pragmatism."

Changed "relink" to "re-link" in all (6 occurrences).

Updated all external links.

Acknowledgements, second paragraph

Changed "to do" to "career to choose" in the ninth sentence.

Preface, second and third paragraphs

Changed "practical wisdom" to "deciding well" in all (5 occurrences).

Preface, sixth paragraph

Changed "a particular belief is false when a belief system does not predict results that correspond to reality" to "particular beliefs are true when a belief system appears to correspond to reality" in the fourth sentence.

Preface, ninth paragraph

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Changed "decide how to live well" to "decide well" in the last sentence.

Preface, tenth paragraph

Changed "seekers of practical wisdom" to "people" in the second sentence.

Chapter 3, The Curious End of Believing Well, twelfth paragraph

"The first step in setting this course is to create the concept of a boundless factor of the timeless end of deciding well. A boundless factor is any factor that we cannot have in excess. The Good, the Truth, and Practical Wisdom are boundless factors of deciding well. We need the Good to avoid deprivation, which hinders us from deciding well. We need the Truth to avoid ignorance, which also hinders us from deciding well. Practical Wisdom is knowledge of how to decide well. We can never have too much of this knowledge."

was changed to:

"The first step in setting this course is to create the concepts of bounded and boundless factors of deciding well. A bounded factor is any factor for solving temporal problems that we can have in excess. One such factor is material resources. An example of excess material resources is maintaining thirty punch card presses when three can more than meet expected demand. We do not need to maintain such a high level of production capacity. Another bounded factor is freedom. An example of excess freedom is the freedom to cripple or kill our competitors. We do not need the freedom to choose what is so clearly wrong.

"In contrast, a boundless factor is any factor of solving temporal problems that we cannot have in excess. The Good, the Truth, and Practical Wisdom are all boundless factors of the temporal end of deciding well. We need the Good to avoid deprivation, which hinders us from deciding well. We need the Truth to avoid ignorance, which also hinders us from deciding well. Practical Wisdom is knowledge of how to decide well. We can never have too much knowledge of how to decide well."

Chapter 3, The Curious End of Believing Well, second to last paragraph

Changed "for cooperating in living well across time" to "for cooperating across time" in the second sentence.

Chapter 3, A Tale of Revolutions, last paragraph

Changed "economics" to "timeless economics" in the last sentence.

Chapter 3, Conclusion, second paragraph

Changed "intelligent life" to "ourselves" in the last sentence.

Chapter 4, Lower Trade Barriers, first paragraph

Changed "Given the timeless concept of deciding well, competition" to "Competition" in the fourth sentence.

Chapter 4, Promote Practical Science, first paragraph

Changed "the science of practical wisdom" to "practical science" in the last sentence.

Appendix B, Balanced Excellence, second paragraph

Changed "There" to "From the view of timeless science, there" in the first sentence.

Appendix D, second paragraph

Changed "have it" to "have found it" in the third sentence.

Changes in Version 2008.05.24

Chapter 4, Tax Well, last paragraph, last sentence

"Taxes on practical wisdom, which is to say taxes on profit, are never wise."

was deleted.

Chapter 4, Lower Trade Barriers, first paragraph

"Free trade promotes competition. Competition promotes replacing non-knowledge resources with knowledge resources. Competition promotes practical wisdom.¹² Nothing is more useful to a person than a person who pursues Wisdom.¹³"

was changed to:

"Free trade promotes competition, which in turn promotes deciding well.¹² Nothing is more useful to a person than a person who decides well.¹³"

Chapter 4, Promote Practical Science

"Practical wisdom is knowledge of how to decide well. It is especially useful in wealthy economies, where the problems people face are more problems of ignorance than of material scarcity. The better we decide, the harder it is to know how to decide better. Furthermore, the better we all decide, the faster things change. The faster things

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change, the harder it is to know how to decide well. Policymakers ought to promote practical wisdom by promoting practical science."

was moved to the end of the aphoristic action list and changed to:

"Deciding well creates the need for ever more knowledge of how to decide well. The better we decide, the harder it is to know how to decide better. Furthermore, the better we all decide, the faster things change. The faster things change, the harder it is to know how to decide well. Policymakers ought to promote ever more knowledge of how to decide well by promoting practical science."

Changes in Version 2008.05.28

Preface, tenth paragraph

Changed "it" to "this concept" in the sixth sentence.

Chapter 2, Wealth, first paragraph

"In general, wealth is what we need to achieve our ends. From the temporal view of living well, wealth is what we need to live well based on what we currently know. Hence, the temporal concept of wealth is what we need to achieve what we currently want. From the timeless view of living well, wealth is what we need to live well based on all that can be known. Hence, the timeless concept of wealth is what we need to live well based to live well."

was change to:

"In general, wealth is what we need to achieve our ends. From the temporal view of living well, wealth is what we need to live well based on what we currently know. From the timeless view of living well, wealth is what we need to live well based on all that can be known. Temporal wealth concerns what we currently want; timeless wealth concerns what we actually need."

Chapter 2, Production, first paragraph

Changed "build products" to "produce" in the last sentence.

Chapter 2, Profit, first paragraph, first two sentences

"From a temporal view, profit is the actual return on a decision. From a timeless view, profit is the expected return on deciding well."

was changed to:

"Profit is the expected return on deciding well."

Chapter 3, The Curious End of Believing Well, fifteenth paragraph

"The last step is to recognize that we need the help of others in this endless pursuit. Further, we cannot live and work too well with others. Hence, Justice is also a boundless factor in deciding well."

was changed to:

"The last step is to recognize that Justice is a boundless factor in deciding well. We need the help of others to pursue the boundless factors of deciding well. We cannot live and work too well with others."

Chapter 3, The Curious End of Believing Well, second to last paragraph

Changed "both time and space" to "time and space" in the fourth sentence.

Chapter 3, *The Ring of Truth*, sixth paragraph

Changed "novel enough" to "just novel enough" in the second sentence.

Chapter 3, Refining Everyday Thinking, third paragraph, last footnote

Changed "decision structure" to "decision tree structure" in the last sentence.

Chapter 3, Refining Everyday Thinking, last paragraph

Changed "view of timeless science" to "timeless view of deciding well" in the first sentence.

Chapter 3, Conclusion, last paragraph

Changed "beliefs that support it" to "belief system that supports it" in the first sentence.

Changed "timeless science and the belief system that supports it" to "the belief system that supports timeless science" in the last sentence.

Chapter 4, Conclusion, first paragraph

Changed "sovereign rights stories are clear and that our laws, habits, customs, and actions conform to them" to "rights, laws, and actions conform to our beliefs about deciding well" in the second sentence.

Changed "revering life well" to "deciding well" in the third sentence.

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Chapter 4, Conclusion, last paragraph

Changed "Governing" to "Further, governing" in the first sentence.

Changed "nature" to "natures" in the last sentence.

Changes in Version 2008.06.02

Preface, sixth paragraph

Changed "particular beliefs are true when a belief system appears to correspond to reality" to "the ground is wet because it rained" in fourth sentence.

Preface, ninth paragraph

Changed "the process of breaking down complicated things into simpler things" to "breaking the whole into parts" in first sentence.

Changed "breaking things down" to "breaking the whole into parts" in first sentence.

Chapter 1, Excellence in Means, tenth paragraph, last sentence

"This concept of excellence provides us with a finite problem to solve."

was changed to:

"We only care about solving the problem at hand."

Chapter 1, Excellence in Means, last paragraph, last sentence

"This concept of excellence opens our eyes to the possibility of replacing nonknowledge resources with knowledge resources in the pursuit of timeless ends."

was changed to:

"In addition to solving the problem at hand, we care about replacing non-knowledge resources with knowledge resources in the pursuit of our timeless end.

"This difference in excellence in means leads underlies the difference between the temporal and timeless concepts of deciding well."

Appendix B, Einstein's Twin Warnings, second paragraph, footnote

Changed "Revised Standard Edition" to "Revised Standard Version."

Changes in Version 2008.06.10

Entire document

Changed "practical wisdom" to "wisdom" in all (19 occurrences).

Changed "practical science" to "decision science" in all (5 occurrences).

Matched HTML and Word documents to find and correct discrepancies. Fixed errors.

Preface, fifth and sixth paragraphs

"Russell's definition of philosophy, which calls to mind the work of August Comte, is consistent with, if not based upon, the modern habit of confusing theology, religion, and faith. From this modern view, these three concepts mean the same thing, which is the zealous and extra-reasonable pursuit of knowing the divine. In contrast, I contend that in our natural pursuit of living well it is useful to distinguish between knowledge of the divine, which I call theology; the pursuit of linking or re-linking with something infinitely greater than ourselves, which I call religion; and certainty beyond reason, which I call faith. We can easily imagine using each of these three concepts in conflict with the other two. We can imagine theists without religious zeal, without faith in the existence of the divine, or with faith in the chance to win a trip to Las Vegas. We can also imagine atheists with faith in the non-existence of the divine or atheists pursuing justice with religious zeal. We ought to distinguish between theology, religion, and faith.

"The modern confusion of theology, religion, and faith hides a fatal flaw in Russell's belief system as expressed in this quote. What Russell calls science can never be completely free from what he calls dogma. This is because all belief systems call on us to put our faith in beliefs that are not certain. We can never be completely sure that all crows are black (the induction problem), that all bachelors are unmarried (the analytic versus synthetic truth problem), or that the ground is wet because it rained (the reductionism problem). As we shall see, a prime example of scientific dogma is the belief that excellence in means is efficiency."

were changed to:

"Russell's definition of our search for knowledge, which calls to mind the work of August Comte, is fatally flawed. What Russell calls science can never be completely free of what he calls dogma. This is because all belief systems call on us to put our faith in beliefs that are not certain. We can never be completely sure that all crows are black (the induction problem), that all bachelors are unmarried (the analytic versus

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synthetic truth problem), or that the ground is wet because it rained (the reductionism problem). As we shall see, a prime example of scientific dogma is the belief that excellence in means is efficiency."

Chapter 1, Two Views of Deciding Well

Moved section to behind the **Setting Words Aright** section. Inserted the following paragraphs at the beginning:

"Useful worldviews are views of the world that help us achieve our *ends* (goals). We may group useful worldviews into two types based on whether their ends are temporal or timeless (normative).⁴ Temporal ends are goals that concern events. Winning a basketball game is a temporal end. Timeless ends are goals that concern processes. Playing basketball well is a timeless end. The difference between a temporal end and a timeless end is the difference between arriving at a destination and heading in a direction.

"We base useful views of the world on the concepts that define ends and *excellence in means*. From a temporal view, we base excellence in means solely on what we know. Because we do not care about what happens after we solve the temporal problem at hand, we do not care about what we might learn by doing. From a timeless view, we base excellence in means both on what we know and on what we may learn. Because we care about what happens after we solve the problem at hand, we care about what happens after we solve the problem at hand, we care about what happens after we solve the problem at hand, we care about what we might learn by doing. We care about replacing non-knowledge resources with knowledge resources in the pursuit of our timeless end.

"We can see this difference in the temporal and timeless views of deciding well. From the temporal view of deciding well, excellence in means is simply excellence in solving temporal problems. Modern economists call excellence in solving temporal problems *efficiency*. Deciding well calls for efficiency. From the timeless view of deciding well, excellence in means is not only excellence in solving temporal problems but also of excellence in choosing temporal problems to solve. Decision scientists call excellence in solving temporal problems to solve effectiveness.⁵ Deciding well calls for both efficiency and effectiveness."

"4 Adler, Mortimer, Ten Philosophical Mistakes, (New York, Macmillan, 1985), 137."

"⁵ The distinction between managerial efficiency and effectiveness depends on the scale of the temporal problem. What is a matter of efficiency at one problem scale is a matter of effectiveness at another. Imagine a hierarchical organization that defines the scale of temporal problems in terms of each member's freedom to decide. What would be a matter of efficiency at a high level in the organization would be a matter of effectiveness at a lower level. *Failure to define a temporal problem scale can cause great confusion.*"

Shifted footnote labels to match new order of footnotes.

Chapter 1, Excellence in Means, title

Changed title to "The EOQ/RTS Example."

Chapter 1, The EOQ/RTS Example, first paragraph

"We base useful views of the world on the concepts that define *ends* and *excellence in means*. The modern economic concept of excellence in means — efficiency — helps us to achieve our ends using the least valuable scarce resources. It also tends to blind us to better ends. We can see this flaw in the economic order quantity (EOQ) model."

was deleted.

Chapter 1, The EOQ/RTS Example, new first paragraph

Changed "new model cars" to "units of our new model electric car" in the first sentence.

Changed "stamping machine" to "machine" in the second sentence.

Inserted the following sentence before the first sentence: "We can see the difference between the temporal and timeless views of deciding well in two models for helping us to decide how often to set up machine tools."

Chapter 1, The EOQ/RTS Example, new third paragraph

Changed "simple model" to "timeless model" in the second sentence.

Chapter 1, The EOQ/RTS Example, last three paragraphs

"The major difference between the EOQ and RTS models concerns their ends. The EOQ model has a temporal end. In contrast, the RTS model has a timeless (normative) end.⁶ Temporal ends are goals that concern events. Winning a basketball game is a temporal end. Timeless ends are goals that concern processes. Playing basketball well is a timeless end. The difference between a temporal end and a timeless end is the difference between arriving at a destination and heading in a direction.

"The EOQ model aims at the temporal end of producing what we currently need to produce well. From this temporal view, we base excellence in means on solely on what we currently know. Because we do not care about what happens in the future, we do not care about what we might learn by doing. We only care about solving the problem at hand.

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"In contrast, the RTS model aims at the timeless end of producing well. From this timeless view, we base excellence in means on both what we know and what we may learn. We divide the concept of *excellence in means* into two parts. The first is *effectiveness*, which we define as excellence in choosing temporal problems to solve. The second is *efficiency*, which we define as excellence in solving temporal problems. This pair of concepts helps us to find and solve temporal problems well.⁷ Because we care about what happens in the future, we care about what we might learn by doing. In addition to solving the problem at hand, we care about replacing non-knowledge resources with knowledge resources in the pursuit of our timeless end."

"6 Adler, Mortimer, Ten Philosophical Mistakes, (New York, Macmillan, 1985), 137."

"⁷ The distinction between managerial efficiency and effectiveness depends on the scale of the temporal problem. What is a matter of efficiency at one problem scale is a matter of effectiveness at another. Imagine a hierarchical organization that defines the scale of temporal problems in terms of each member's freedom to decide. What would be a matter of efficiency at a high level in the organization would be a matter of effectiveness at a lower level. *Failure to define a temporal problem scale can cause great confusion*."

were changed to:

"In summary, the EOQ model aims at the temporal end of producing what we currently need to produce well. From this temporal view, we base excellence in means on solely on what we currently know. Because we do not care about what happens after we solve the temporal problem at hand, we do not care about what we might learn by doing. In contrast, the RTS model aims at the timeless end of producing well. From this timeless view, we base excellence in means on both what we currently know and what we may learn. Because we care about what happens after we solve the problem at hand, we care about what we might learn by doing. We care about replacing non-knowledge resources with knowledge resources in the pursuit of the timeless end of producing well."

Chapter 2, Wisdom, first paragraph

Changed "Aristotle tells us that the timeless end" to "The timeless end" in the first sentence.

Changed "manipulate concepts" to "think" in the second sentence.

Chapter 2, Trust, second paragraph

Changed "knowledge economies" to "the production and trade of knowledge" in the first sentence.

Chapter 2, Trust, last paragraph

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Changed "economic ills" to "trading ills" in the last sentence.

Chapter 3, The Curious End of Believing Well, sixteenth paragraph

Changed "ignorance about Justice" to "ignorance" in the first sentence.

Chapter 3, Refining Everyday Thinking, seventh paragraph

"This timeless concept of science as the process of refining everyday thinking combines Einstein's insight into the everyday nature of science with the RTS/EOQ insight into deciding well. The universal research program of, by, and for intelligent life consists of both subordinate research programs and theories. Subordinate research programs help us to find problems to solve. Theories help us to solve given problems. For helping us to find problems to solve, it takes a research program to beat a research program. For helping us to solve given problems, it takes a theory to beat a theory. In general, it takes an intellectual tool to beat an intellectual tool. The RTS research program beats the EOQ theory at helping us to find problems to solve."

was deleted.

Chapter 3, Refining Everyday Thinking, new seventh paragraph

Changed "new" to "timeless" in the first sentence.

Chapter 3, Refining Everyday Thinking, new eighth paragraph

Changed "the affairs of intelligent life are separate and distinct" to "humans are not a part of" in the last sentence.

Chapter 3, Refining Everyday Thinking, new ninth paragraph

Changed "refine" to "would refine" in the second sentence (3 occurrences).

Changed "intellectual" to "intelligent" in the last sentence.

Chapter 3, Refining Everyday Thinking, new tenth paragraph

Changed "it would not imply that humans are separate and distinct from other intelligent life" to "the arts would include what non-human forms of intelligent life create" in the last sentence.

Chapter 3, Refining [Practical] Wisdom, title

Changed title to "Refining Deciding Well."

Chapter 3, Refining Deciding Well, first paragraph

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Changed "stories" to "stories (narratives/theories)" in the first sentence.

Chapter 3, Refining Practical Stories

Changed title to "*Refining Stories*."

Changed "happens in economies" to "happens" in all (3 occurrences).

Changed "will happen in economies" to "will happen" in all (4 occurrences).

Chapter 3, Computer Models, last paragraph

Changed "test this knowledge against experience" to "learn from the experience" in the last sentence.

Chapter 3, A Crude Look at the Whole, last paragraph

Changed "economists" to "modern economists" in the first sentence.

Chapter 3, A Tale of Two Revolutions, last paragraph

Changed "economic logic" to "logic" in the third sentence.

Changed "to define timeless economics to be the premier decision science" to "a timeless science of deciding well" in the last sentence.

Chapter 3, Conclusion, second paragraph

Changed "theories" to "stories" in the fifth sentence (2 occurrences).

Chapter 4, The Explicit Experiment, fourth paragraph

Changed "in his dissenting opinion in a decision that upheld a law limiting free speech" to "in one of his most famous dissenting opinions" in the third sentence.

Chapter 4, The Sovereign Story of Timeless Science, last paragraph

Changed "economic logic" to "logic" in the third sentence.

Chapter 4, Economic Policy, title

Changed title to "Good Policies."

Chapter 4, Control the Money Supply Passively, first paragraph, footnote, first three sentences

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"Monetary policies change prices. Changing prices changes our perceptions of problems. Students of Austrian economics will recognize this power of monetary authorities from the Austrian malinvestment theory of inflationary booms."

was deleted.

Chapter 4, Promote Decision Science, first paragraph

Changed "decision science" to "the timeless science of deciding well" in the last sentence.

Appendix B, Practical Benefits of Magical Mysticism, title and first paragraph

Changed "practical benefit" to "worldly benefit" in all (3 occurrences).

Appendix B, Worldly Benefits of Magical Mysticism, second paragraph

Changed "practical benefit" to "benefit" in the second sentence.

Changes in Version 2008.06.10

Preface, third paragraph,

"For people who believe that science is definite knowledge of what is, the concept of a science of deciding well is nonsense. If we cannot define deciding well, which includes defining our ultimate ends, there can be no science of deciding well. On the other hand, if science is the pursuit of definite knowledge of what is, then the issue becomes whether it is possible to define a means of defining deciding well."

was changed to:

"My wish for a science of deciding well raises the issue of the proper scope of science. Should we base science on what we currently know or on what we wish to know? If we base science on what we currently know, the concept of a science of deciding well is nonsense. If we cannot define deciding well, which includes defining our ultimate ends, there can be no science of deciding well. On the other hand, if we base science on what we wish to know, there can be a science of deciding well."

Preface, fourth paragraph

"The concept of science as the pursuit of definite knowledge conflicts with the modern belief that science is separate and distinct from religion."

was changed to:

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"The belief that science should be based on what we wish to know conflicts with the modern belief that science concerns definite knowledge."

Changed "belief" to "modern belief" in the second sentence.

Preface, sixth paragraph, first two sentences

"Russell's definition of our search for knowledge, which calls to mind the work of August Comte, is fatally flawed. What Russell calls science can never be completely free of what he calls dogma."

were changed to:

"Russell's beliefs about our search for knowledge, which call to mind the work of August Comte, are fatally flawed. Chief among these flaws is the belief that what Russell calls science can be free of what he calls dogma."

Chapter 1, Two Views of Deciding Well, first paragraph

Switched order of the fourth ("Winning a basketball game is a temporal end.") and fifth ("Timeless ends are goals that concern processes.") sentences.

Preface, eighth paragraph

Changed "should" to "must" in the fourth sentence.

Chapter 3, The Curious End of Believing Well, sixth paragraph, footnote

Changed "modern thinkers" to "many modern readers" in the first sentence.

Added the following sentences:

"In our natural pursuit of living well it is useful to distinguish between theology (knowledge of the divine); religion (the pursuit of linking or re-linking with something infinitely greater than ourselves); and faith (certainty beyond reason). We can easily imagine using each of these three concepts in conflict with the other two. We can imagine theists without religious zeal, without faith in the existence of the divine, or with faith in the chance to win a trip to Las Vegas. We can also imagine atheists with faith in the non-existence of the divine or atheists pursuing justice with religious zeal. We ought to distinguish between theology, religion, and faith."

Chapter 3, The Curious End of Believing Well, tenth paragraph, first footnote

"Note the similarity of Plato's ultimate end of believing well to the Vedanta school of Indian philosophy, which culminates in the individual soul (Atma) re-linking with the

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soul of the universe (Brahman), and to Albert Einstein's desire to understand God's thoughts."

was changed to:

"Again, this concept of linking or re-linking is agnostic. It includes an atheistic pursuit of the Truth. It also includes Albert Einstein's dream of understanding God's thoughts and the Vedanta school of Indian thought's goal of the individual soul (*Atma*) merging with the universal soul (*Brahman*)."

Chapter 3, The Curious End of Believing Well, seventh paragraph

Changed "From the timeless view of believing well" to "From the timeless view" in the first sentence.

Chapter 3, The Curious End of Believing Well, eighth paragraph

Changed "temporal problem" to "problem" in the third sentence.

Chapter 3, The Curious End of Believing Well, thirteenth paragraph

Merged with twelfth paragraph.

Chapter 3, Refining Everyday Thinking, ninth paragraph

Changed "non-human forms" to "as yet undiscovered non-human forms" in the last sentence.

Changes in Version 2008.06.14

Acknowledgments, second paragraph

Changed "produce" to "write" in the second to last sentence.

Preface, fifth paragraph

Changed "Chief among these flaws" to "Foremost among these" in the second sentence.

Changed "This is because all" to "All" and "call on us to put our faith in" to "include" in the third sentence.

Changed "the ground is wet because it rained" to "excellence in means is efficiency" in the fourth sentence.

The last sentence, "As we shall see, a prime example of scientific dogma is the belief that excellence in means is efficiency.", was deleted.

Chapter 1, Two Views of Deciding Well, second paragraph

"We base useful views of the world on the concepts that define ends and *excellence in means*. From a temporal view, we base excellence in means solely on what we know. Because we do not care about what happens after we solve the temporal problem at hand, we do not care about what we might learn by doing that is useful for more than solving the problem at hand. From a timeless view, we base excellence in means both on what we know and on what we may learn. Because we care about what happens after we solve the problem at hand, we care about what we might learn by doing. We care about replacing non-knowledge resources with knowledge resources in the pursuit of our timeless end."

was changed to:

"We base useful views of the world on the concepts that define ends and *excellence in means*. From a temporal view, we base excellence in means on what we know and what we might learn that is useful for solving the problem at hand. We do not care about what we may learn that is useful for more than solving the problem at hand. From a timeless view, we base excellence in means on what we know and on what we may learn that is useful in pursuing our timeless end. We care about replacing non-knowledge resources with knowledge resources in the pursuit of our timeless end."

Chapter 1, Two Views of Deciding Well, third paragraph

Changed "Modern economists call" to "We commonly call" in the third sentence.

Changed "efficiency" to "us to decide efficiently" in the fourth sentence.

Changed "Decision scientists call excellence in solving temporal problems *efficiency* and" to "We commonly call" in the sixth sentence.

Changed "both efficiency and effectiveness" to "us to decide both efficiently and effectively" in the last sentence.

Moved the footnote from the sixth sentence to the last sentence.

Changed "managerial efficiency and effectiveness" to "efficiency and effectiveness" in the first sentence of the footnote.

Chapter 1, Two Views of Deciding Well, fourth paragraph, last sentence

"Further, our actions reveal our preferences, which is to say that to decide well is to decide perfectly."

was changed to:

"To decide well is to decide perfectly. In modern economic terms, our actions reveal our preferences."

Chapter 1, The EOQ/RTS Example, last paragraph

"In summary, the EOQ model aims at the temporal end of producing what we currently need to produce well. From this temporal view, we base excellence in means on solely on what we currently know. Because we do not care about what happens after we solve the temporal problem at hand, we do not care about what we might learn by doing. In contrast, the RTS model aims at the timeless end of producing well. From this timeless view, we base excellence in means on both what we currently know and what we may learn. Because we care about what happens after we solve the problem at hand, we care about what we might learn by doing. We care about replacing non-knowledge resources with knowledge resources in the pursuit of the timeless end of producing well."

was changed to:

"In summary, the EOQ model aims at the temporal end of producing what we currently need to produce well. From this temporal view, we base excellence in means on solely on what we currently know. We do not care about what we might learn by doing. In contrast, the RTS model aims at the timeless end of producing well. From this timeless view, we base excellence in means on both what we currently know and what we may learn by doing. We care about replacing non-knowledge resources with knowledge resources in the pursuit of the timeless end of producing well."

Chapter 2, Introduction, second paragraph

Changed "In contrast, from the timeless view" to "From the timeless view" in the third sentence.

Changed "to help us to solve" to "to help us solve" in the third sentence.

Split the paragraph into two after the second sentence.

Chapter 2, Introduction, third paragraph

Changed "to help us to solve" to "to help us solve" in the first sentence.

Chapter 3, The Curious End of Believing Well, fourth paragraph

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"Kuhn saw testing beliefs within a given system of concepts to be normal science and testing beliefs across belief systems to be revolutionary science."

was changed to:

"Kuhn distinguished between testing beliefs *within* and *across* systems of concepts. He called the first 'normal' and the second 'revolutionary.""

Chapter 3, The Curious End of Believing Well, seventh paragraph

Changed "considering" to "us to consider" in the second sentence.

Chapter 3, The Ring of Truth, first paragraph

"Pursuing the timeless end of believing well calls for pursuing all boundless factors of deciding well. This is a blessing, not a burden. It provides us with a more certain way of testing problems to solve before we attempt to solve them. Only if a problem is consistent with our current beliefs about all boundless factors can we be reasonably certain that the beliefs supporting our choice have the ring of Truth. Only then can we say that we have found a beautiful problem to solve."

was changed to:

"The timeless end of believing well calls for us to pursue all of the boundless factors of deciding well. This is a blessing, not a burden. It provides us with a more certain way of testing problems to solve before we attempt to solve them. If a problem is consistent with all of our beliefs about the boundless factors, then it rings true. We can be reasonably certain that we have found a beautiful problem to solve."

Appendix B, Conclusion, first paragraph

Changed "results contain" to "the results contain" in the sixth sentence.

Appendix C, Machine Tools, third paragraph

Changed "approach to automating" to "approach to automation" in the second sentence.

Appendix C, Machine Tools, fourth paragraph

Changed "approach to automating" to "approach to automation" in the first sentence.

Changes in Version 2008.06.21

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Preface, fifth paragraph

Changed "these" to "these mistakes" in the second sentence.

Changed "certain" to "definite" in the third sentence.

Changed "sure" to "certain" in the fourth sentence.

Preface, end

Added the one word paragraph: "Enjoy."

Chapter 3, Refining Deciding Well, first paragraph

Deleted "(narratives/theories)" from the first sentence.

Changes in Version 2008.06.27

Chapter 3, The Curious End of Believing Well, fourth paragraph

"Twentieth-century philosopher of science Thomas Kuhn provides us with concepts for describing the two basic ways in which we respond to unexpected events. Kuhn distinguished between testing beliefs *within* and *across* systems of concepts. He called the first 'normal' and the second 'revolutionary.'² Following Kuhn's lead, an unexpected event that leads us to change our beliefs within a given system of concepts is ordinary and an unexpected event that leads us to change our system of concepts is extraordinary. The decision to discard the belief that all swans are white rather than to create a new genus was ordinary. The original decision to create the new genus of *chenopis* was (a bit) extraordinary."

"² Kuhn, Thomas, *The Structure of Scientific Revolutions*, (Chicago: University of Chicago Press, 1962), chapter 10."

was deleted.

Chapter 3, The Curious End of Believing Well, new ninth paragraph

"His approach is rational and ordinary, not religious and extraordinary."

was changed to:

"His approach is rational, not religious.⁵"

"⁵ In Kuhnsian terms, Aristotle's approach is normal science, not revolutionary science. See Kuhn, Thomas, *The Structure of Scientific Revolutions*, (Chicago: University of Chicago Press, 1962), chapter 10."

Changes in Version 2008.06.28

Chapter 1, Setting Words Aright, second paragraph, first sentence

"Concepts are a type of knowledge resource."

was moved to the end of the first paragraph.

Chapter 1, Two Views of Deciding Well, third paragraph

Changed "simply excellence" to "excellence" in the second sentence.

Chapter 1, Two Views of Deciding Well, seventh paragraph

Changed "to identify" to "identify" in the second sentence.

Changed "the endless pursuit of deciding well" to "planning terms" in the last sentence.

Chapter 2, Introduction, first paragraph

Changed "this concept" to "the timeless concept of deciding well" in the second sentence.

Chapter 3, The Elephant in the Room, last paragraph,

Changed "to find" to "find" in the second sentence.

Chapter 3, Refining Everyday Thinking, seventh paragraph

Changed "this group" to "the true sciences" and "humans" to "the beliefs and actions of intelligent life" in the last sentence.

Chapter 3, Refining Deciding Well, last paragraph, last sentence, footnote

Changed "prevailing" to "modern" in the second sentence.

Chapter 3, *Refining Stories*, fourth paragraph

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Changed "what we need to live well" to "what we need to live well (the Good)" in the second sentence.

Merged the third footnote into the second.

Chapter 3, Refining Stories, fifth and sixth paragraphs

"We also ought to weed out all stories that fall short of the timeless end of Justice. Foremost of these are stories that concern efficiency. We pursue Justice by deciding well. As we saw in the EOQ/RTS example, deciding well is not the same thing as acting efficiently. We can see this difference in the modern economic general equilibrium model, which describes what each factor of production receives under conditions of perfect efficiency. What is missing from this model is what we owe to the people who created the knowledge that we use at no charge. As previously argued, the debts that we owe to these people we ought to pay to others by deciding well. Deciding well calls for us to learn by doing, not to act efficiently.

"Similarly, we ought to weed out all stories that aim at sustaining a good society. Consider what our lives would be like today if all previous generations of humans aspired to nothing more than to sustain a good society. Again, deciding well calls for us to learn by doing. It calls for us to leave the caves of our ancestors."

were changed to:

"We also ought to weed out all stories that fall short of the timeless end of Justice. Foremost of these are stories that concern efficiency. We pursue Justice by deciding well. As we saw in the EOQ/RTS example, deciding well is not the same thing as acting efficiently. For example, we ought to weed out all stories that aim at sustaining a good society. Consider what our lives would be like today if all previous generations of humans aspired to nothing more than to sustain a good society. Deciding well calls for us to learn by doing. It calls for us to leave the caves of our ancestors."

act effectively as well as efficiently" in the last sentence.

Merged the paragraph with the fifth paragraph.

Chapter 3, A Tale of Revolutions, last paragraph, last sentence, footnote

Changed "While" to "Although" in the second sentence.

Appendix B, Conclusion, first paragraph,

Changed "to choose" to "choose" in the first sentence.

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Changes in Version 2008.06.30

Preface, sixth paragraph, last sentence

"Because one of the boundless factors of deciding well is knowledge of the unchanging elements and relations (ideal forms) that underlie all sensations, the oxymoronic *idealistic pragmatism* works as well."

was deleted.

Chapter 3, The Curious End of Believing Well, last paragraph

Deleted "(ideal forms)" from the last sentence.

Chapter 3, The Elephant in the Room, last paragraph

Changed "transcendental values" to "transcendent values" in the last sentence.

Chapter 3, A Tale of Revolutions, last paragraph, last sentence, footnote

"³⁰ There will likely be some people who believe that this call to change the conceptual framework of economics confirms Karl Marx's belief that the predominant mode of production determines the prevailing conceptual framework. Although there is some truth in this belief, it tells less than half the story. As anyone who tried to explain the Toyota system to someone lacking a learning worldview would know, at least some of the new conceptual framework has to be in place before a new mode of production can become dominant. In the language of complex adaptive systems, a mode of production and the concepts that best describe it co-evolve."

was deleted.

Changes in Version 2008.07.04

Preface, second paragraph

Changed "explain how to live" to "guide our actions" in the seventh sentence.

Preface, third paragraph

Changed "wish" to "want" in the second and last sentences.

Preface, fourth paragraph

Changed "wish" to "want" in the first sentence.

Chapter 1, Two Views of Deciding Well, first paragraph

Italicized "temporal" and "timeless" in the second sentence.

Deleted "(normative)" from the second sentence.

Changed the footnote from:

"Adler, Mortimer, Ten Philosophical Mistakes, (New York, Macmillan, 1985), 137."

to:

"In his book, *Ten Philosophical Mistakes*, Mortimer Adler distinguishes between temporal and normative ends. See Adler, Mortimer, *Ten Philosophical Mistakes*, (New York, Macmillan, 1985), 137. Because all ends are inherently normative, using the philosophical term 'normative' in this context is potentially confusing. Replacing it with 'timeless' avoids this confusion."

Chapter 1, Two Views of Deciding Well, last paragraph, footnote

"⁶ Note that the distinction between the temporal and timeless views of deciding well concerns the distinction between efficiency and the combination of efficiency and effectiveness. Unlike the distinction between efficiency and effectiveness, this distinction is independent of our choice of a temporal problem to solve. Just as we can never choose the largest number, we can never choose a temporal problem so large that it eliminates the distinction between the temporal and timeless views of deciding well."

was deleted.

Chapter 1, The EOQ/RTS Example, seventh paragraph, last sentence, footnote

"⁸ This lesson about the great value of learning-by-doing deserves a second example. In 1991, the Japanese began broadcasting analog high-definition television. The same year, the Americans chose digital over analog for their standard. Although digital was much more costly, the Americans saw that the cost of digital was falling much faster. By considering what they were likely to learn, the Americans found a better problem to solve. For more on the subject of learning, see Appendix A."

was deleted.

Chapter 1, end

Added a new section titled "A Timeless View":

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"The Toyota strategy calls for all team members to improve their work continually. This in turn calls for good people, humane conditions, cooperation, and a timeless view. A timeless view is confusing to people who are locked into a temporal view. The following *kaizen* slogans highlight this problem. Each is obvious from a timeless view, yet paradoxical from a temporal one:

Good quality is less expensive than poor quality. When we consider good quality and poor quality per se, good quality is less expensive. This is because good quality avoids rework, returns, low employee morale, and customer dissatisfaction. It is only when we consider the costs of producing good quality versus poor quality, *given a fixed stock of useful knowledge*, that good quality is more costly. Once we have learned how to produce good quality for the same cost, doing so is less costly.

Producing in small batches is less expensive than producing in large ones. Making things in small batches lowers capital costs and increases flexibility. Once we have learned how to make things in small batches for the same cost, doing so is less costly.

Smaller, lighter, narrower, and shorter are better than bigger, heavier, wider, and taller. Again, once we have learned how to make products using fewer material resources for the same cost, doing so is less costly.

Finding a problem is like finding a diamond. Without a problem to solve there can be no improvement.

"In Edwin Abbott's novel *Flatland*, characters perform apparent miracles by breaking through dimensional boundaries. Flatlanders who have left their two-dimensional world find it impossible to convey what they did to their fellows who believe that the terms 'up' and 'north' refer to the same concept.⁷ Similarly, Toyota has performed apparent miracles by quickly pushing back its "efficiency frontiers." It has thrived by learning well. Toyota team members find it impossible to convey what they do to people who believe the terms 'efficiency' and 'excellence in means' refer to the same concept. Like most residents of Flatland, these residents of our age fail to grasp a larger truth. To grasp this larger truth, they need a timeless view."

"⁷ Abbott, Edwin A, *Flatland: A Romance of Many Dimensions*, (Oxford: Basil Blackwell, 1884), chapter 21, reprinted in Project Gutenberg, <<u>http://www.gutenberg.org/catalog</u>>, (4 July 2008)."

Chapter 2, Trade, first paragraph, last sentence, footnote, last sentence

"In rapidly changing sectors in which transportation and communication costs are no longer major factors, the sector itself takes the leading role."

was deleted.

Chapter 2, Three Mistakes, first paragraph, last sentence

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"This mistake caused many Western experts to see the Toyota system as a set of techniques rather than as a means of creating techniques that involved paying workers not only for their skilled hands but also for their trained minds."

was changed to:

"This blindness led John Maynard Keynes to see "sticky wages" (the slowness of the price of labor to fall in response to a fall in the demand for labor) as a problem to work around rather than a problem to solve. It also led most Western experts to see the Toyota system as a set of techniques rather than as a means of creating techniques that involved paying workers not only for their skilled hands but also for their trained minds."

Chapter 2, Three Mistakes, last paragraph

Changed "wish" to "want" in the fifth sentence.

Chapter 3, Recursive Failures, last paragraph, last sentence, footnote

Replaced the footnote:

"²⁴ A good example of pretending to be certain is the modern economic national accounting system, which uses a temporal rather than a timeless concept of wealth. For more on this, see Appendix D."

with the following paragraphs from Appendix D:

"A good example of pretending to be certain is the modern economic national accounting system, which uses a temporal rather than a timeless concept of wealth. Imagine a pill that makes people decide better. Releasing this product would change how people decide to live. Some parts of the economy would shrink and other parts would grow. Resources would flow from the shrinking parts to the growing ones. The immediate effect would be a fall in aggregate production and a rise in unemployment. Modern economic science would portray one of the greatest advances in human history as a disaster.

"The problem here is one of how to measure what we need to live well, which calls for knowing the Truth about the Good. Plato only aspired to such knowledge. Only a fool would claim to have found it. From a technical view, the problem of measuring services is universal and the problem of measuring quality is impossibly hard.

"An accounting truism holds that accounting systems promote what we measure at the expense of what we do not measure. Soviet central planners learned this the hard way. When they set screw factory quotas by the quantity of screws produced, factory managers produced too few big screws and too many small screws. When they set quotas by the weight of screws produced, managers produced too many big screws

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and too few small screws. The solution to our national income accounting problems will be similar to the solution to the Soviet accounting problems. We will replace our decision-making system with one that depends less on problematic measurements. The question is whether we will wait for a major catastrophe before making this change."

Chapter 3, A Tale of Revolutions, last paragraph, last sentence, footnote

"²⁹ There will likely be some people who believe that this call to change the conceptual framework of economics confirms Karl Marx's belief that the predominant mode of production determines the prevailing conceptual framework. Although there is some truth in this belief, it tells less than half the story. At least some of the new conceptual framework has to be in place before a new mode of production can become dominant. In the language of complex adaptive systems, a mode of production and the concepts that best describe it co-evolve."

was returned. (Deleted 6/30/2008).

Chapter 3, Conclusion last paragraph, last sentence

"The next section explains how we may test the belief system that supports timeless science."

was changed to:

"The next section explains how we may test the belief system that supports timeless science as a whole.²⁹"

"²⁹ This section contains an argument for a holistic approach to science based what we need to know in order to decide well. Economists would call this working the demand side of science. Readers interested in an argument for a holistic approach to science based on what economists would call the supply side, which is the normal concern of philosophers of science, will find one in W. V. O. Quine's "Two Dogmas of Empiricism." Quine's argument against reductionism is subject to itself. This bit of recursion creates an open-ended problem that we cannot solve. In the words of Dwight Eisenhower, which call to mind the incompleteness theorems of Kurt Gödel, "If a problem cannot be solved, enlarge it." We need to enlarge the problem of refining our belief systems to the limits of imagination. This calls for a demand side view of science."

Appendix A

was deleted. References to appendices B and C were updated.

Appendix D

was deleted.

Changes in Version 2008.07.18

Acknowledgments, fourth paragraph

"In the early 1980s, I was head of information systems and human resources at Star Forms, a closely held business forms manufacturing company. I believed that our firm owed its success to our ability to act and learn faster than others. A lecture by Taiichi Ohno in 1984 convinced me that we had much to learn about learning."

were changed to:

"In the early 1980s, I was head of information systems and human resources at Star Forms, a closely-held business forms printer. Our firm had grown thirty-fold in a dozen years while throwing off cash. I believed that we owed our success to our ability to act and learn faster than others. A lecture by Taiichi Ohno convinced me that we had much to learn about learning."

Preface, second paragraph, last two sentences

"Instead, I ought to have wished for a method of weeding out members of the set of theories that we use to guide our actions. Rather than a theory of moral philosophy, I ought to have wished for a *science* of deciding well."

were changed to:

"Rather than a theory of moral philosophy, I ought to have wished for a *science* of deciding well. I ought to have wished for a method of weeding out members of the set of theories that we use to guide our actions."

Preface, fifth paragraph

Changed "completely certain" to "certain" and "excellence in means is efficiency" to "the whole is nothing more than the sum of its parts" in the fourth sentence.

Preface, seventh paragraph

Changed "failing to take the infinitely long view" to "doing so" in the last sentence.

(While accurate, this is too jarring a statement for the preface.)

Chapter 1, Setting Words Aright

Moved last paragraph in first paragraph back to the second paragraph. Italicized first occurrence of "knowledge resources" in the second paragraph.

Chapter 1, Two Views of Deciding Well, fourth paragraph

Changed "To decide well" to "Further, to decide well" in the fourth sentence.

Chapter 1, Two Views of Deciding Well, fifth paragraph

Changed "To decide well" to "Further, to decide well" in the fourth sentence.

Chapter 1, A Timeless View, title

Changed "A Timeless View" to "The Need for Timeless Views."

Chapter 1, The Need for Timeless Views, first paragraph

Changed "a timeless view" to "a timeless view of deciding well" in the second sentence.

Chapter 1, The Need for Timeless Views, last paragraph

Changed "left their two-dimensional world find it impossible to convey what they did" to "been lifted above their two-dimensional world find it impossible to explain what happened" in the second sentence.

Changed "Toyota team members find it impossible to convey what they do" to "Production team members find it impossible to explain what happens at Toyota" in the fourth sentence.

Changed "a timeless view" to "a timeless view of deciding well" in the last sentence.

Chapter 3, The Curious End of Believing Well, first paragraph

Changed "completely certain" to "certain" in the second sentence.

Chapter 3, The Curious End of Believing Well, seventh paragraph, footnote

Changed "cooked" to "reduced" and "into" to "to" in the first sentence.

Chapter 3, The Curious End of Believing Well, twelfth paragraph

Changed "Thus," to "Thus" and "into" to "to form" in the last sentence.

Chapter 3, The Curious End of Believing Well, third from last (Rawls) paragraph, second footnote

Changed "revering life" to "revering life well" in the last sentence.

Chapter 3, Refining Everyday Thinking, ninth paragraph

Changed "this group" to "the arts" in the last sentence.

Changed "undiscovered non-human forms" to "unknown forms" in the last sentence.

Chapter 3, Understanding Our Failures, title

Changed "Understanding Our Failures" to "Learning from Experience."

Chapter 3, Conclusion, second paragraph, last three sentences

"It also reminds us that applying the tools of the true sciences to the intelligent life sciences foolishly ignores the two-way relation between our beliefs and reality. Our stories about how ants behave do not change the way in which ants behave, but our stories about how we behave tend to change the way in which we behave. Sociobiology may be a good tool for studying ants, but it is a poor tool for studying ourselves."

were changed to:

"It also reminds us that the stories we use to explain what ants do don't change what ants do, but the stories we use to explain what we do tend to change what we do. Mindlessly applying the tools of the true sciences to the intelligent life sciences ignores the two-way relation between our beliefs and reality. Such mindlessness, which some call *scientism*, leads to catastrophe."

Chapter 3, Conclusion, last paragraph

Changed "belief system that supports it" to "core beliefs that support it" in the first sentence.

Deleted "as a whole" from the last sentence.

Chapter 4, The Sovereign Story of Timeless Science, second paragraph, footnote

Changed "Arguably," to "From the timeless view of deciding well," in the first sentence.

Moved footnote (see above) to the end of the Refining Everyday Thinking section.

Afterword, first paragraph, last sentence

"My curt answer is I oppose people who hinder deciding well."

was deleted.

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Afterword, second paragraph, first sentence

"I believe that we cannot separate our right to choose from our responsibility to choose well."

was changed to:

"I am not a "conservative.""

Afterword, third paragraph, first sentence

"I also believe that progress creates stress."

was changed to:

"I am also not a "liberal." Progress creates stress."

Afterword, last paragraph

"Thus, I am neither a "conservative" nor a "liberal" in the way in which most people in the United States use these terms."

was changed to:

"I embrace all who seek to decide well. To decide well is to revere life well. Hence, I am a member of the party of life."

Afterword, third paragraph

Changed "stress ought to remember" to "the stress of progress ought to take to heart" in the last sentence.

Appendix A, Introduction, third paragraph

Changed "true" to "true based on what we know" in the first sentence.

Appendix A, Introduction, last paragraph

Changed "useful" to "useful in deciding well" in the first sentence.

Appendix A, Human Needs, title

Changed "Human Needs" to "The Farther Reaches of Living Well."

Appendix A, The Farther Reaches of Living Well, last paragraph

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Changed "truth, beauty, and justice" to "Truth, Beauty, and Justice" in the fourth sentence.

Appendix A, Schweitzer's Universal Spiritual Need, first paragraph

Changed "truth, beauty, and justice" to "Truth, Beauty, and Justice" in the last sentence.

Appendix B, Inducing Knowledge, first paragraph

Changed "uncovered" to "uncovers" in the last sentence.

Changes in Version 2008.07.21

Chapter 2, Three Mistakes, second paragraph

Changed "However, we" to "We" in the second sentence.

Chapter 3, The Curious End of Believing Well, ninth paragraph, last footnote

Changed "is normal science, not revolutionary science" to "is more normal science than revolutionary science" in the first sentence.

Chapter 3, Refining Everyday Thinking, last paragraph, footnote, second to last sentence

"We need to enlarge the problem of refining our belief systems to the limits of imagination."

was changed to:

"To avoid Quine's two dogmas of empiricism, we need to enlarge the problem of refining our belief systems beyond the constraints of language. We need to transcend language."

Chapter 3, Refining Stories, fourth paragraph, last footnote

Added the sentence:

"Note that this claim concerns the demand side of science."

Chapter 3, Refining Stories, fourth paragraph, last footnote

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"²² Our needs for such things as nutrition and water arise on the level of our bodies. Our needs for such things as affection and esteem arise on the level of our minds. Our needs for such things as the longing to link mystically with something greater than ourselves arise on the level of our spirits. Until we thoroughly understand the complex relations that link our bodies, minds, and spirits, we ought to weed out all theories about our needs that focus on any one of these levels of abstraction. Focusing on any one of these levels will tend to blind us to needs that emerge on other levels. This rule weeds out (1) sociobiology, which ignores our minds and spirits; (2) postmodern moral relativism, which ignores our bodies and spirits; and (3) all spiritual teachings that ignore our bodies and minds."

was changed to:

"²² In terms of complex adaptive systems, our needs emerge on various levels of abstraction. Our needs for such things as nutrition and water emerge on the level of our physical bodies. Our needs for such things as affection and esteem emerge on the level of our minds. Our needs for such things as the longing to link or re-link with something greater than ourselves emerge on the level of our spirits. Until we thoroughly understand how things that happen on one level of abstraction affect what happens on other levels, we ought to weed out all theories about our needs that focus on any one level of abstraction. Focusing on any one level will tend to blind us to needs that emerge on other levels. This rule weeds out (1) sociobiology, which ignores our minds and spirits; (2) postmodern moral relativism, which ignores our bodies and spirits; and (3) all spiritual teachings that ignore our bodies and minds."

Chapter 4, Sovereign Story of Timeless Science, third paragraph, footnote

"⁸ From the timeless view of deciding well, the sovereign story of timeless science is nothing more than a refinement of the sovereign story of the Declaration of Independence. In his book *We Hold These Truths* (New York, Macmillan Publishing Company, 1987), Mortimer Adler argues that the Preamble of the Declaration calls for us to pursue happiness justly, where happiness is the timeless end of living well. In contrast, the sovereign story of timeless science calls for us to pursue happiness justly *ever better*."

was promoted to the body of the text and changed to:

"From the timeless view of deciding well, the sovereign story of timeless science is nothing more than a refinement of the sovereign story of the Declaration of Independence.⁸ The sovereign story of the Declaration calls for us to pursue happiness justly, where happiness is the timeless end of living well. In contrast, the sovereign story of timeless science calls for us to pursue happiness justly *ever better*."

"⁸ We can see some evidence for this in the history of American attitudes about change. A sovereign story of timeless science should lead to a culture that embraces "thriving in winds and surviving in gales of creative destruction." Alexis de

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Tocqueville claimed to have found such a culture during his famous journey across the United States in 1831-32: "Born often under another sky, placed in the middle of an always moving scene, himself driven by the irresistible torrent which draws all about him, the American has no time to tie himself to anything, he grows accustomed only to change, and ends by regarding it as the natural state of man. He feels the need of it, more he loves it; for the instability, instead of meaning disaster to him, seems to give birth only to miracles all about him." See Pierson, George W., *Tocqueville and Beaumont in America*, (New York: Oxford University Press, 1938), 119. Regrettably, modernism undermined the sovereign story of the Declaration. We see this most clearly in the replacement of the timeless concept of happiness (the timeless end of living well) by the modern concept of happiness (a state of well-being). See Adler, Mortimer, *Ten Philosophical Mistakes*, (New York, Macmillan, 1985), chapter 6. Today, Tocqueville's claim holds more hope than substance."

Chapter 4, The Sovereign Story of Timeless Science, last paragraph

Changed "this sovereign story" to "the sovereign story of timeless science" in the last sentence.

Afterword

was deleted. Note that the heading went into the *Sovereign Story of Timeless Science* footnote above.

Changes in Version 2008.07.24

Chapter 1, The EOQ/RTS Example, fifth paragraph

Changed "making cars and trucks in huge batches" to "mass producing cars and trucks" in the third sentence.

Chapter 2, Two Means of Living Well, last paragraph, last sentence

Replaced parenthesis around seven deadly sins with a colon.

Chapter 2, Human Capital, Work, and Leisure, last paragraph, last two sentences

Changed "Often the best way to do this involves combining work and leisure. In religious terms, following our true calling is a blessing."

were changed to:

"We work in order to make ourselves whole. Living well calls for combining work and leisure."

Chapter 2, Three Mistakes, first paragraph

Changed ""sticky wages" (the slowness of the price of labor to fall in response to a fall in the demand for labor)" to "the slowness of the price of labor to fall in response to a fall in the demand for labor ("sticky wages")" in the fourth sentence.

Chapter 2, Three Mistakes, last paragraph

Changed "stores where shoppers" to "stores in which shoppers" in the fifth sentence.

Chapter 3, The Curious End of Believing Well, fifth paragraph, footnote

Changed "may appear to" to "will" in the first sentence.

Chapter 3, The Curious End of Believing Well, eighth and ninth paragraphs

Merged these two paragraphs.

Chapter 3, The Curious End of Believing Well, new twelfth paragraph, last footnote

"This expansive concept of justice does more than help us satisfy our need to link or re-link with something greater than ourselves. It is also useful to us in ways that are less directly bound to our nature. For example, we need countless forms of microorganisms to sustain not only our environment but also our bodies. Further, we can learn about life from virtually every other form of life. For more on the subject of revering life well, see Appendix A."

was changed to:

"This expansive concept of justice does more than help us satisfy our need to link or re-link with something greater than ourselves. We need other forms of life to live well. For example, we need microorganisms to sustain not only our environment but also our bodies. Further, we can learn from virtually every other form of life. For example, we can learn about composite materials from the fangs of sandworms and about biochemical processes from microorganisms living in extreme environments. For more on the subject of revering life well, see Appendix A."

Chapter 4, Promote Decision Science, first paragraph

"Deciding well creates the need for ever more knowledge of how to decide well. The better we decide, the harder it is to know how to decide better. Furthermore, the better we all decide, the faster things change. The faster things change, the harder it is to know how to decide well. Policymakers ought to promote ever more knowledge of how to decide well by promoting the timeless science of deciding well."

was changed to:

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"Governing well is a matter of helping all of us decide well. Deciding well creates the need for ever more knowledge of how to decide well. The better we decide, the harder it is to know how to decide better. Further, the better we all decide, the faster things change. The faster things change, the harder it is to know how to decide well. Policymakers ought to promote ever more knowledge of how to decide well by promoting the timeless science of deciding well.

"An important part of deciding well is choosing governments that govern well. Until we choose our governments by how well they govern, we will not get governments that foster knowledge useful in deciding well. We will not get governments that foster the better angels of our natures."

Chapter 4, Conclusion, last paragraph

"Further, governing well is a matter of helping all of us decide well. Until we choose our governments by how well they govern, we will not get governments that foster knowledge useful in deciding well. We will not get governments that foster the better angels of our natures."

was deleted.

Changes in Version 2008.07.28

Chapter 1, The EOQ/RTS Example, third paragraph, footnote

Changed "ought to be" to "should be" in the last sentence.

Chapter 1, The Need for Timeless Views, last paragraph

Changed "this larger truth" to "this truth" in the last sentence.

Chapter 3, The Curious End of Deciding Well, fifth paragraph

Changed "personally held values" to "claims to values" in the third sentence.

Deleted the sentence: "These values include such things as the good, the truth, and justice."

Chapter 3, The Curious End of Deciding Well, tenth paragraph

Changed "all boundless factors of the temporal end of deciding well" to "boundless factors" in the twelfth sentence.

Chapter 3, The Curious End of Deciding Well, eleventh paragraph

Changed "calls on us to" to "calls for us to" in the third and fourth sentences.

Chapter 3, The Curious End of Deciding Well, twelfth paragraph

Changed "boundless factor in deciding well" to "boundless factor" in the first sentence.

Changed "cannot live" to "can never live" in the last sentence.

Chapter 3, Refining Everyday Thinking, last paragraph, footnote

"This section contains an argument for a holistic approach to science based what we need to know in order to decide well. Economists would call this working the demand side of science. Readers interested in an argument for a holistic approach to science based on what economists would call the supply side, which is the normal concern of philosophers of science, will find one in W. V. O. Quine's "Two Dogmas of Empiricism." Quine's argument against reductionism is subject to itself. This bit of recursion creates an open-ended problem that we cannot solve. In the words of Dwight Eisenhower, which call to mind the incompleteness theorems of Kurt Gödel, "If a problem cannot be solved, enlarge it." To avoid Quine's two dogmas of empiricism, we need to enlarge the problem of refining our belief systems beyond the constraints of language. We need to transcend language. This calls for a demand side view of science."

was changed to:

"This section contains an argument for a holistic approach to science based what we need to know in order to decide well. Economists would call this working the demand side of science. Readers interested in an argument for a holistic approach to science based on what economists would call the supply side, which is the normal concern of philosophers of science, will find one in W. V. O. Quine's "Two Dogmas of Empiricism." Quine's supply side argument against reductionism is subject to itself. This bit of recursion creates an open-ended problem that suppliers cannot solve. In the words of Dwight Eisenhower, which call to mind the incompleteness theorems of Kurt Gödel, "If a problem cannot be solved, enlarge it." This calls for a demand side view that transcends language. True scientists may take solace in knowing that the problem of reduction is more immediate for the intellectual life sciences than it is for the true sciences."

Chapter 4, The Explicit Experiment, last paragraph, footnote

"⁷ Both groups of true believers have seen past political success put the government at risk. The social justice-inspired Smoot Hawley Tariff Act of 1930 and National Recovery Act (NRA) of 1933 extended and deepened the Great Depression. Had the Supreme Court not struck down Title I of the NRA in 1935, the United States might have followed Italy and Germany into national socialism or the Soviet Union into

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international socialism. The Christianity-inspired Amendment XVIII to the Constitution, which outlawed the manufacture, sale, and transportation of intoxicating liquors in 1920, led to widespread government corruption. Had the voters not repealed this amendment in 1933, it might have so undermined the legitimacy of the government as to have made the government unable to cope with the crises of the late 1930s and early 1940s."

was promoted to the body of the text and changed to:

"True-believing theists once claimed the United States owed its success to their Protestant heritage. Today, they claim it was their Judeo-Christian heritage. In the future, they will likely claim it was their Abrahamic heritage. A better explanation is that the United States owes its success to its timeless tradition of freedom and progress. All who believe that they know the Truth ought to learn to see the world anew.

"True-believing socialists want to use government to protect people from stress. A government that seeks to protect its people from stress by retarding progress is unjust. It robs its people, other people, and other species of a better future. All who seek to limit freedom in order to reduce stress ought to remember that foolish policies lead to embedded mistakes in our networks of knowledge-in-use. These mistakes pile up into embacles. Embacles slow progress. They also lead to debacles, the sudden release of pent-up stress. All who would give up essential liberty to purchase a little temporary safety deserve neither liberty nor safety.

"Both groups of true believers have put the United States at risk of major, perhaps fatal debacles. In 1920, true-believing Christians passed an amendment that outlawed the manufacture, sale, and transportation of alcohol. This led to widespread corruption. The voters repealed this amendment in 1933. This was in time to prevent the entire country from following Chicago into gangland chaos at a critical point in world history. In 1933, true-believing socialists passed the National Recovery Act (NRA). The NRA worsened the quality of decision-making, thereby prolonging and deepening the Great Depression. The Supreme Court struck down Title I of this act in 1935. This was in time to prevent the United States from following the Russian Empire, Italy, and Germany into full-blown socialism."

Chapter 4, Promote Decision Science, last paragraph

Changed "governments that govern well" to "governments" in the first sentence.

Appendix A, Worldly Benefits of Magical Mysticism, last paragraph, end

Added the sentence: "It can help us to conceive what was inconceivable."

Appendix A, Einstein's Twin Warnings, second paragraph, first sentence

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"Belief in a Creator who reveals truths to us about how we ought to live does not rid us of uncertainty about how we ought to live."

was changed to:

"Most theists believe in a Creator who reveals truths to us about how we ought to live. This belief does not rid us of uncertainty about how we ought to live."

Changes in Version 2008.07.30

Acknowledgments, second to last paragraph, end

Added the sentence: "I have since tried to put my thoughts into simple, common words."

Acknowledgments, last paragraph

Changed "acknowledgment caveat" to "warning" in the first sentence.

Preface, second paragraph

Changed "strategy for living based on a theory of moral philosophy" to "theory of deciding well" in the second sentence.

Changed "strategy for living based on a theory" to "theory of deciding well" in the sixth sentence.

Changed "theory of moral philosophy" to "theory" in the seventh sentence.

Preface, fifth paragraph, last sentence

"We can never be certain that all crows are black (the induction problem), that all bachelors are unmarried (the analytic versus synthetic truth problem), or that the whole is nothing more than the sum of its parts (the reductionism problem)."

was changed to:

"We can never be certain that all crows are black (the induction problem) or that all bachelors are unmarried (the analytic versus synthetic truth problem)."

Chapter 3, The Curious End of Deciding Well, tenth paragraph, footnote

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"We can imagine (1) an infinitely large problem that contains all other problems, (2) a means of solving this universal problem, and (3) a means of improving the means of solving this universal problem. Part of the means of improving the means of solving this universal problem (3) is refining our beliefs about (1), (2), and (3). We may call this endless process of refining our beliefs about (1), (2), and (3) "science." We may also call this means of defining science "boundless pragmatism." Note that this holistic definition of science reconciles W. V. O. Quine's belief that philosophy of science is philosophy enough with Morton White's apparently contradictory belief that philosophy ought to include the whole of human experience."

was moved to the end of the sixth paragraph of the **Refining Everyday Thinking** section and changed to:

"Note that this holistic definition of science reconciles W. V. O. Quine's belief that philosophy of science is philosophy enough with Morton White's apparently contradictory belief that philosophy ought to include the whole of human experience."

Chapter 3, Refining Everyday Thinking, last paragraph, footnote

"This section contains an argument for a holistic approach to science based what we need to know in order to decide well. Economists would call this working the demand side of science. Readers interested in an argument for a holistic approach to science based on what economists would call the supply side, which is the normal concern of philosophers of science, will find one in W. V. O. Quine's "Two Dogmas of Empiricism." Quine's supply side argument against reductionism is subject to itself. This bit of recursion creates an open-ended problem that suppliers cannot solve. In the words of Dwight Eisenhower, which call to mind the incompleteness theorems of Kurt Gödel, "If a problem cannot be solved, enlarge it." This calls for a demand side view that transcends language. True scientists may take solace in knowing that the problem of reduction is more immediate for the intellectual life sciences than it is for the true sciences."

was changed to:

"This section contains an argument for a holistic approach to believing well based what we need to know in order to decide well. Economists would call this working the demand side of believing well. Readers interested in an argument for a holistic approach to believing well based on what economists would call the supply side, which is the normal concern of philosophers of science, will find one in W. V. O. Quine's "Two Dogmas of Empiricism." The problem of believing well is timeless. We address timeless problems, not solve them. In the words of Dwight Eisenhower, which call to mind the incompleteness theorems of Kurt Gödel, "If a problem cannot be solved, enlarge it." Enlarging the problem of believing well to the limits of imagination calls for considering the demand side of believing well."

Chapter 3, Refining Stories, fifth paragraph

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Changed "learn by doing" to "learn" in seventh sentence.

Chapter 4, Control the Money Supply Passively, end

Added the paragraph:

"Recessions, like small forest fires, are a blessing. They release embedded mistakes without tearing the fabric of civilization. The choice we face is not between good times and bad times. It is rather between cycles of good times and bad times and longer cycles of good times and major catastrophes."

Appendix B, Folding in Processes, fifth paragraph, last sentence

"The lower the production rate, the greater the relative benefits of folding in become."

was changed to:

"Everything else being equal, the lower the production rate, the greater the benefits of folding in are."

Appendix B, Folding in Processes, sixth paragraph

Was merged with the fifth paragraph.

Appendix B, Folding in Processes, new sixth paragraph

Changed "Managers" to "We commonly" in the first sentence.

Changed "custom production" to "job shop (custom) production" in the second sentence.

Appendix B, Folding in Processes, new seventh paragraph

Changed "Traditional custom (job shop) production" to "Job shop production" in the first sentence.

Appendix B, Folding in Processes, new ninth paragraph

Changed "relatively simple" to "simple" in the first sentence.

Changed "compared with" to "compared to" in the last sentence.

Appendix B, Folding in Processes, last paragraph

Changed "custom" to "job shop" in the first sentence.

Appendix B, Smoothing Flows, fourth paragraph

Added paragraph breaks after the second and fourth sentences.

Appendix B, *Machine Tools*, first paragraph

Changed "compared with" to "compared to" in the sixth sentence.

Appendix B, *Machine Tools*, second paragraph

Changed "an industrial-age view" to "a temporal view of producing well common in the West" in the first sentence.

Changed "a knowledge-age view" to "a timeless view of producing well" in the third sentence.

Changed "a knowledge-age view" to "a timeless view" in the fifth sentence.

Changes in Version 2008.08.02

Entire work, footnotes

Added hyperlinks to Amazon for all book references in the on-line version.

Chapter 1, The Need for Timeless Views, last paragraph

Changed "what happened to their fellows" to "what happened in higher planes of existence to their fellows" in the second sentence.

Chapter 2, Title Heading

Changed reference from Bantam Books to Columbia University Press.

Chapter 2, Pleasure and Pain, second paragraph

Changed "defined" to "described" in the third sentence.

Deleted ", this losing ourselves in activity," from the eighth sentence.

Chapter 2, Trade, first paragraph

Changed "complex interplay" to "interplay" in the last sentence.

Chapter 3, The Curious End of Deciding Well, twelfth paragraph

Changed "boundless factor" to "boundless factor of deciding well" in the first sentence.

Chapter 3, The Curious End of Deciding Well, thirteenth paragraph

"However, when we try to learn more about Justice by considering this, we find ourselves continuously returning to the endless pursuits of the Good and the Truth. We are in a mental hall of mirrors."

were changed to:

"However, when we try to learn more about Justice by considering this, we find ourselves continuously returning to the endless pursuits of the Good and the Truth; we find ourselves in a mental hall of mirrors."

Chapter 3, The Curious End of Deciding Well, thirteenth paragraph

Merged with the twelfth paragraph.

Chapter 3, Refining Stories, fourth paragraph, footnote

Changed "terms of complex adaptive systems" to "complexity science terms" in the first sentence.

Chapter 3, A Crude Look at the Whole, second paragraph, last five sentences

"Chief among these are wisdom, trust, and freedom. Wisdom includes knowledge of both timeless and temporal tools. Trust includes the belief that governments will act as expected, hence the rule of law. Freedom includes rights to property. In the endless pursuit of deciding well, wisdom, trust, and freedom are strategic assets."

were changed to:

"In the endless pursuit of deciding well, these factors are strategic assets."

Chapter 3, A Tale of Revolutions, first paragraph, quote

"The rapid Progress *true* science now makes occasions my regretting sometimes that I was born so soon. It is impossible to imagine the Height to which may be carried, in a thousand years, the Power of Man over Matter. We may perhaps learn to deprive large Masses of their Gravity and give them absolute Levity, for the sake of easy Transport. Agriculture may diminish its labor and double its Produce; all Diseases may be by sure means prevented or cured, not excepting even that of Old Age, and our Lives lengthened at pleasure even beyond the antediluvian Standard. O that moral Science were in a fair

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way of Improvement, that Men would cease to be Wolves to one another, and that human beings would at length learn what they now improperly call Humanity!"²⁸

⁴²⁸ Franklin, Benjamin, *The Writings of Benjamin Franklin*, edited by Albert Henry Smyth, (New York: Macmillan, 1905), vol. VIII, p 10."

was changed to:

"The rapid progress *true* science now makes, occasions my regretting sometimes that I was born so soon. It is impossible to imagine the height to which may be carried, in a thousand years, the power of man over matter. We may perhaps learn to deprive large masses of their gravity and give them absolute levity, for the sake of easy transport. Agriculture may diminish its labor and double its produce; all diseases may be by sure means prevented or cured, not excepting even that of old age, and our lives lengthened at pleasure even beyond the antediluvian standard. O that moral science were in a fair way of improvement, that men would cease to be wolves to one another, and that human beings would at length learn what they now improperly call humanity!"²⁸

⁴²⁸ Franklin, Benjamin, *The Works of Benjamin Franklin*, edited by Jared Sparks, (Chicago: Townsend MacCoun, 1882), vol. VIII, p 418. Available in the public domain at Google books, (2 August 2008)."

Chapter 4, The Explicit Experiment, fifth paragraph

"There are at least two ways of settling this conflict between sovereign stories. The first is to claim that the Declaration story concerns justice and the Constitution story concerns legality. This claim of a source of justice higher than the general will of society favors theists who want to enshrine what they believe to be true in law. The second is to dismiss the Creator statement in the Declaration as a theistic statement that has become ritual and non-theistic through long customary usage. This claim of "ceremonial deism" favors socialists who want to enshrine what they believe to be true in law. Both of these groups of true believers want the government to act according to their beliefs about what is true. True believers in theism want the government to administer social justice; true believers in socialism want government to administer social justice. Both groups want their religion to become the state religion."

was changed to:

"How do citizens reconcile the idealistic story of the Declaration with the pragmatic story of the Constitution? One popular way is to claim that the Declaration story concerns justice and the Constitution story concerns legality. This affirms a theistic source of justice higher than the social contract. Another popular way is to claim that the Declaration story has become ritual and non-theistic through long customary use. This denies a source of justice higher than the social contract. Both of these ways violate the spirit, if not the letter, of the First Amendment. The first way establishes a

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state religion based on the pursuit of theistic justice and the second establishes a state religion based on the pursuit of social justice.⁷"

⁴⁷ The First Amendment has not stopped true believers in theistic justice or true believers in social justice from seeking to establish their religion as the state religion. Both groups of true believers have put Benjamin Franklin's political experiment in mortal danger. In 1920, true believers in theistic justice passed an amendment that took away the freedom to make, sell, and transport alcoholic beverages. Widespread violations of this law led to widespread corruption. The voters repealed this amendment in 1933. This was in time to prevent the entire country from following big cities into gangland chaos at a critical point in world history. In 1933, true believers in social justice passed the National Industrial Recovery Act. This act put many of the most basic decisions about buying and selling in the hands of government bureaucrats and industrial boards. The resulting fall in the quality of decision-making greatly prolonged and deepened the Great Depression. In a case challenging whether the federal government could take away not only local butchers freedom to choose the price of the chickens they offered and what wages they paid their workers, but also their customers freedom to choose which chickens to buy (A. L. A. Schecter Poultry Corporation v. United States, 295 U. S. 495), the Supreme Court struck down Title I of this act in 1935. This was in time to prevent the country from following the Russian Empire, Italy, and Germany into full-blown socialism. If Benjamin Franklin were alive today, he would likely remind us that all who would give up essential liberty to purchase a little temporary safety deserve neither liberty nor safety. He would also likely tell us that all who believe that they know the Truth ought to see the world anew."

Chapter 4, The Explicit Experiment, sixth, seventh, and eighth paragraphs

"True-believing theists once claimed the United States owed its success to their Protestant heritage. Today, they claim it was their Judeo-Christian heritage. In the future, they will likely claim it was their Abrahamic heritage. A better explanation is that the United States owes its success to its timeless tradition of freedom and progress. All who believe that they know the Truth ought to learn to see the world anew.

"True-believing socialists want to use government to protect people from stress. A government that seeks to protect its people from stress by retarding progress is unjust. It robs its people, other people, and other species of a better future. All who seek to limit freedom in order to reduce stress ought to remember that foolish policies lead to embedded mistakes in our networks of knowledge-in-use. These mistakes pile up into embacles. Embacles slow progress. They also lead to debacles, the sudden release of pent-up stress. All who would give up essential liberty to purchase a little temporary safety deserve neither liberty nor safety.

"Both groups of true believers have put the United States at risk of major, perhaps fatal debacles. In 1920, true-believing Christians passed an amendment that outlawed

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the manufacture, sale, and transportation of alcohol. This led to widespread corruption. The voters repealed this amendment in 1933. This was in time to prevent the entire country from following Chicago into gangland chaos at a critical point in world history. In 1933, true-believing socialists passed the National Recovery Act (NRA). The NRA worsened the quality of decision-making, thereby prolonging and deepening the Great Depression. The Supreme Court struck down Title I of this act in 1935. This was in time to prevent the United States from following the Russian Empire, Italy, and Germany into full-blown socialism."

were deleted.

Chapter 4, The Sovereign Story of Timeless Science, third paragraph, footnote

Added the following to the end of the Tocqueville quote:

"(The idea of perfection, of continuous and endless amelioration of social conditions, this idea is presented to him unceasingly, in all its aspects.)"

Chapter 4, Judging Interventions, second paragraph

Changed "alcohol during the roaring twenties" to "intoxicating liquors during the 1920s" in the fourth sentence.

Appendix A, *Schweitzer's Universal Spiritual Need*, fourth paragraph, first six sentences

"Pure magical mysticism requires that we abandon life rather than live it. It only becomes practicable when mixed with ethical mysticism. Because it ignores our relation with the world, it offers no foundation for an ethical system.⁴ Ethical mysticism does not involve this problem. However, unlike the magical, it can be incomplete. Where complete ethical mysticism stems from a union with all life, incomplete forms stem from a union with something less.⁵"

"⁴ We see this in ancient Hinduism's failure to explain adequately how merit (*karma*), which concerns our relation with the infinite Being, relates to worldly duty (*dharma*), which concerns our relation with life. The resulting caste system has been a tremendous hindrance to progress toward the timeless end of deciding well."

"⁵ Incomplete forms of ethical mysticism include those of such modern Western movements as nationalism, socialism, fascism, and communism."

were changed to:

"Pure magical mysticism requires that we abandon life rather than live it. It only becomes practicable when mixed with ethical mysticism. Because it ignores our relation with the world, it offers no foundation for an ethical system. We see this in

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ancient Hinduism's failure to explain adequately how merit (*karma*), which concerns our relation with the infinite Being, relates to worldly duty (*dharma*), which concerns our relation with life. The resulting caste system has been a great hindrance to progress toward the timeless end of deciding well.

"Ethical mysticism does not involve this problem. However, unlike the magical, it can be incomplete. Where complete ethical mysticism stems from a union with all life, incomplete forms stem from a union with something less. Incomplete forms of ethical mysticism include those of such modern Western movements as nationalism, socialism, fascism, and communism."

Appendix A, Worldly Benefits of Magical Mysticism, second paragraph, footnote

Changed reference from Bantam Books to Columbia University Press.

Appendix A, Worldly Benefits of Magical Mysticism, last paragraph

Changed "complex interplay of changes" to "interplay" in the third sentence.

Appendix A, Conclusion, title

Changed title to "Finding Beautiful Problems."

Appendix B, Temporal Details, first paragraph, footnote

Changed title from *Toyota Production System* to *Toyota Production System*: *Beyond Large-Scale Production*.

Appendix B, Production Links, third paragraph, footnote

Changed title from *Toyota Production System* to *Toyota Production System: Beyond* Large-Scale Production.

Appendix B, Summary, title

Changed title to "Less is More."

Changes in Version 2008.08.09

Chapter 1, Two Views of Deciding Well, first paragraph, footnote

Moved second sentence (book reference) to the end of the footnote.

Chapter 1, The EOQ/RTS Example, last paragraph

"In summary, the EOQ model aims at the temporal end of producing what we currently need to produce well. From this temporal view, we base excellence in means on solely on what we currently know. We do not care about what we might learn by doing. In contrast, the RTS model aims at the timeless end of producing well. From this timeless view, we base excellence in means on both what we currently know and what we may learn by doing. We care about replacing non-knowledge resources with knowledge resources in the pursuit of the timeless end of producing well."

was deleted.

Chapter 1, The Need for Timeless Views, last paragraph

Changed "'efficiency' and 'excellence in means'" to "'excellence in means' and 'efficiency'" in the fourth sentence.

Chapter 3, Computer Models, first paragraph, footnote

Changed "reprinted" to "available" in the last sentence.

Chapter 3, A Tale of Revolutions, first paragraph, last footnote

Changed "Available in the public domain at Google" to "Searchable text available in Google books" in the last sentence.

Chapter 3, A Tale of Revolutions, last paragraph, footnote

Changed "In the language of complex adaptive systems, a" to "A" in the last sentence.

Changed "belief system" to "system of core beliefs" in the first sentence.

Chapter 3, Conclusion, last paragraph

Changed "it" to "timeless science" in the first sentence.

Chapter 4, The Explicit Experiment, second paragraph

Changed "proposition to be tested" to "experiment" in the third sentence.

Chapter 4, The Explicit Experiment, fifth paragraph

Changed "source" to "theistic source" in the fifth sentence.

Changed "Both" to "From the timeless view of deciding well, both" in the sixth sentence.

Chapter 4, The Sovereign Story of Timeless Science, first paragraph

Switched the order of the last two sentences. The civil faith sentence now comes before the ship of state sentence.

Chapter 4, The Sovereign Story of Timeless Science, third paragraph

Changed "Franklin's sovereign story of moral science" to "the sovereign rights story of the Declaration" in the first sentence.

Chapter 4, The Sovereign Story of Timeless Science, third paragraph

"From the timeless view of deciding well, the sovereign story of timeless science is nothing more than a refinement of the sovereign story of the Declaration of Independence.⁸ The sovereign story of the Declaration calls for us to pursue happiness justly, where happiness is the timeless end of living well. In contrast, the sovereign story of timeless science calls for us to pursue happiness justly *ever better*."

"⁸ We can see some evidence for this in the history of American attitudes about change. A sovereign story of timeless science should lead to a culture that embraces "thriving in winds and surviving in gales of creative destruction." Alexis de Tocqueville claimed to have found such a culture during his famous journey across the United States in 1831-32: "Born often under another sky, placed in the middle of an always moving scene, himself driven by the irresistible torrent which draws all about him, the American has no time to tie himself to anything, he grows accustomed only to change, and ends by regarding it as the natural state of man. He feels the need of it, more he loves it; for the instability, instead of meaning disaster to him, seems to give birth only to miracles all about him. (The idea of perfection, of continuous and endless amelioration of social conditions, this idea is presented to him unceasingly, in all its aspects.)" See Pierson, George W., Tocqueville and Beaumont in America, (New York: Oxford University Press, 1938), 119. Regrettably, modernism undermined the sovereign story of the Declaration. We see this most clearly in the replacement of the timeless concept of happiness (the timeless end of living well) by the modern concept of happiness (a state of well-being). See Adler, Mortimer, Ten Philosophical Mistakes, (New York, Macmillan, 1985), chapter 6. Today, Tocqueville's claim holds more hope than substance."

was merged with last paragraph and changed to:

"From the timeless view of deciding well, the sovereign rights story of timeless science is nothing more than a refinement of the sovereign rights story of the Declaration. The Declaration story calls for us to pursue happiness justly.⁸ In contrast, the timeless science story calls for us to pursue happiness justly *ever better*.⁹"

"⁸ Regrettably, modernism undermined the sovereign story of the Declaration. We see this most clearly in the replacement of the timeless concept of happiness (the timeless

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end of living well) by the modern concept of happiness (a state of well-being). See Adler, Mortimer, *Ten Philosophical Mistakes*, (New York, Macmillan, 1985), chapter 6."

"[•] We can see some evidence for the claim that the Declaration story is a crude timeless science story in the history of American attitudes about change. A timeless science story should lead to a culture that embraces "thriving in winds and surviving in gales of creative destruction." Alexis de Tocqueville claimed to have found such a culture during his famous journey across the United States in 1831-32: "Born often under another sky, placed in the middle of an always moving scene, himself driven by the irresistible torrent which draws all about him, the American has no time to tie himself to anything, he grows accustomed only to change, and ends by regarding it as the natural state of man. He feels the need of it, more he loves it; for the instability, instead of meaning disaster to him, seems to give birth only to miracles all about him. (The idea of perfection, of continuous and endless amelioration of social conditions, this idea is presented to him unceasingly, in all its aspects.)" After the corruption of the Declaration story by modernism, Tocqueville's claim holds more hope than substance. See Pierson, George W., *Tocqueville and Beaumont in America*, (New York: Oxford University Press, 1938), 119."

Chapter 4, The Sovereign Story of Timeless Science, last paragraph

Changed "sovereign story" to "sovereign rights story" in the second to last sentence.

Chapter 4, Control the Money Supply Passively, last paragraph

Changed "like small forest fires" to "like forest fires that burn only underbrush" in the first sentence.

Added the sentence: "To seek to prolong good times is short-sighted."

Appendix A, Finding Beautiful Problems, title

Changed title to "Making Beautiful Decisions."

Changes in Version 2008.08.11

Entire document

Changed "can also" to "also can" in all (6 occurrences).

Chapter 1, Setting Words Aright, first paragraph, last sentence

"Concepts are resources for helping us to achieve our ends."

was deleted.

Chapter 1, Two Views of Deciding Well, third paragraph

Changed "Deciding well calls for us" to "To decide well is" in the fourth sentence.

Changed "Deciding well calls for us" to "To decide well is" in the last sentence.

Deleted the footnote:

"⁵ The distinction between efficiency and effectiveness depends on the scale of the temporal problem. What is a matter of efficiency at one problem scale is a matter of effectiveness at another. Imagine a hierarchical organization that defines the scale of temporal problems in terms of each member's freedom to decide. What would be a matter of efficiency at a high level in the organization would be a matter of effectiveness at a lower level. In planning terms, what would be a matter of tactics at a high level in the organization would be a matter of strategy at a lower level. *Failure to define a temporal problem scale can cause great confusion*."

Chapter 1, Two Views of Deciding Well, fourth paragraph

"From the temporal view, the formal process of deciding consists of (1) formulating alternatives; (2) evaluating alternatives; (3) choosing an alternative; and (4) implementing the chosen alternative. The process of deciding well is a matter of performing these formal steps well, which includes balancing the cost and benefits of each step. Few decisions deserve all of these formal steps. Further, to decide well is to decide perfectly. In modern economic terms, our actions reveal our preferences."

was changed to:

"From the temporal view, a formal decision *event* consists of (1) formulating alternatives; (2) evaluating alternatives; (3) choosing an alternative; and (4) implementing the chosen alternative. To decide well is to decide perfectly.⁵ In modern economic terms, our actions reveal our preferences."

"⁵ To decide well is also a matter of performing these formal steps well, which includes balancing the cost and benefits of each step. Few decision *events* deserve all of these formal steps."

Chapter 1, Two Views of Deciding Well, fourth paragraph

"From the timeless view, the formal process of deciding is endlessly repeating the cycle of (1) finding a problem to solve based on a timeless end; (2) formulating alternatives; (3) evaluating alternatives; (4) choosing an alternative; (5) implementing the chosen alternative; and (6) learning from the experience. The process of deciding well is a matter of performing these formal steps well, which includes balancing the

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cost and benefits of each step. Few decisions deserve all of these formal steps. Further, to decide well is not to decide perfectly. We make mistakes. We learn from our mistakes. Waste is a regrettable by-product of learning-by-doing."

was changed to:

"From the timeless view, a formal decision *process* is the endlessly repeating cycle of (1) finding a problem to solve based on the timeless end of the process; (2) formulating alternative solutions to the chosen problem; (3) evaluating these alternatives; (4) choosing an alternative; (5) implementing the chosen alternative; and (6) learning from the experience. To decide well is *not* to decide perfectly. We make mistakes. We learn from our mistakes. Waste is a regrettable by-product of learning-by-doing."

"⁶ To decide well is also a matter of performing these formal steps well, which includes balancing the cost and benefits of each step. Few decision *cycles* deserve all of these formal steps."

Chapter 3, The Curious End of Believing Well, seventh paragraph, footnote

Changed "is more normal science than revolutionary science" to "is normal science, not revolutionary science" in the first sentence.

Chapter 3, The Elephant in the Room, third paragraph

"The essential theological explanation of this coincidence is even more simple and straightforward. The Creator created us with the need to seek the Creator. We seek the Creator by deciding well."

was changed to:

"The essential theological explanation of this coincidence is as simple and straightforward. The Creator created us with the need to seek the Creator. We seek the Creator by deciding well. Crude means of deciding well emerged from our religious impulse to seek the Creator. Over time, we refine our means of deciding well by deciding well. We learn by doing. Deciding well and our understanding of deciding well co-evolve."

Chapter 3, Refining Stories, fourth paragraph

Deleted "(the Good)" from the third sentence sentence.

Moved last footnote to the end of the last sentence.

Changed the last sentence from:

"People who decide well consider their bodies, minds, and spirits."

to:

"To think of ourselves as animals, as computers, or as angels, rather than as human beings, is certain to embed major mistakes into our networks of knowledge-in-use. We ought to consider our bodies, minds, *and* spirits."

Chapter 3, Refining Stories, fifth paragraph

"We also ought to weed out all stories that fall short of the timeless end of Justice. Foremost of these are stories that concern efficiency. We pursue Justice by deciding well. As we saw in the EOQ/RTS example, deciding well is not the same thing as acting efficiently. For example, we ought to weed out all stories that aim at sustaining a good society. Consider what our lives would be like today if all previous generations of humans aspired to nothing more than to sustain a good society. Deciding well calls for us to learn. It calls for us to leave the caves of our ancestors."

was changed to:

"We also ought to weed out all temporal stories. Hence, we ought to weed out all stories that concern efficiency. As we saw in the EOQ/RTS example, deciding well is not the same thing as acting efficiently. We also ought to weed out all stories that concern either sustainability or society, and doubly so all stories that concern sustaining a good society. Consider what our lives would be like today if all previous generations of humans aspired to nothing more than to sustain a good society. The timeless end of deciding well calls for us to learn. It calls for us to leave the caves of our ancestors."

Changes in Version 2008.08.15

Preface, seventh paragraph

Changed "people" to "modern thinkers" in the first sentence.

Chapter 1, The EOQ/RTS Example, fifth paragraph

Changed "similar parts as smoothly as identical parts" to "batches of similar parts as smoothly as masses of identical parts" in the fifth sentence.

Changed "(3) coordinating batch production precisely, and (4) maintaining high rates of machine tool availability" to "and (3) coordinating batch production precisely" in the sixth sentence.

Chapter 1, The EOQ/RTS Example, fifth paragraph

Changed "similar parts as smoothly as identical parts" to "batches of similar parts as smoothly as masses of identical parts" in the fifth sentence.

Changed "(3) coordinating batch production precisely, and (4) maintaining high rates of machine tool availability" to "and (3) coordinating batch production precisely" in the sixth sentence.

Chapter 2, Introduction, second paragraph

Changed "tools" to "concepts" in the first sentence.

Chapter 2, Human Capital, Work, and Leisure, first paragraph

Changed "trading off" to "balancing" in the last sentence.

Chapter 2, Human Capital, Work, and Leisure, second paragraph

Changed "combining" to "combining" in the last sentence.

Chapter 2, Trust, last paragraph

Changed "trading ills" to "economic ills" in the last sentence.

Chapter 2, Three Mistakes, last paragraph

Changed "promote" to "increase" in the first sentence.

Chapter 3, The Curious End of Believing Well, tenth paragraph

Changed "what is so clearly wrong" to "what so clearly unjust" in the tenth sentence.

Chapter 3, The Curious End of Believing Well, second from last paragraph

Changed "debt" to "debts" in the second sentence.

Chapter 3, Refining Deciding Well, second paragraph, last sentence, footnote

"There is a twist."

was changed to:

"However, communication across paradigms is only partial."

Added the following sentence to the end of the footnote:

"In the fullness of time, we must deal with the consequences of our actions."

Chapter 3, A Tale of Revolutions, second paragraph, footnote

Changed "please ourselves rather than how decide well" to "seek to please ourselves rather than how we seek to decide well" in the last sentence.

Chapter 4, Control the Money Supply Passively, last paragraph

Changed "good times and bad times and longer cycles" to "good times and bad times, and longer cycles" in the fourth sentence.

Appendix A, Balanced Excellence, last paragraph

"Some means to mystical oneness sacrifice safety or health in order to conserve scarce resources. Most successful religions include beliefs to check these extreme means. Examples include the beliefs that we have as many lifetimes as it takes to reach mystical union and that we can reach the ultimate end of existence in an existence after death. Healthy religions balance the emotional (Dionysian) and reasonable (Apollonian) means to mystical oneness.⁸"

⁴⁸ Maslow, Abraham H., *Religions, Values, and Peak Experiences*, (New York: Viking, 1970), preface."

was changed to:

"Some means to mystical oneness sacrifice safety or health in order to conserve scarce resources. Religions that revere life include beliefs to check these extreme means. One example is the Hindu belief that we have as many lifetimes as it takes to reach mystical union. Another is the Catholic belief that we can reach mystical union during an existence after death known as purgatory. Life-revering religions balance emotional and reasonable means to mystical oneness.⁸"

⁴⁴⁸ Compare this claim to Maslow's modern Western belief that healthy religions balance the Dionysian and Apollonian means to religious experience. Maslow, Abraham, *Religions, Values, and Peak Experiences*, (New York: Viking, 1970), preface."

Appendix A, Making Beautiful Decisions, title

Changed title to "Deciding Beautifully."

Appendix A, Making Beautiful Decisions, first paragraph, second sentence

"These tools come in two types."

was changed to:

"We may divide these tools into two groups."

Changes in Version 2008.08.16

Chapter 1, Two Views of Deciding Well, first paragraph, footnote

Deleted "the philosophical term" from the fifth sentence.

Chapter 1, Two Views of Deciding Well, third paragraph, last three sentences

"From the timeless view of deciding well, excellence in means is not only excellence in solving temporal problems but also excellence in choosing temporal problems to solve. We commonly call excellence in choosing temporal problems to solve *effectiveness*. To decide well is to decide both efficiently and effectively."

were moved to a new paragraph between the fourth and fifth paragraphs.

Chapter 1, Two Views of Deciding Well, fourth paragraph

Changed "From the temporal view, a" to "A" in the first sentence.

Merged paragraph with the preceding paragraph

Chapter 1, Two Views of Deciding Well, fifth paragraph

Changed "From the timeless view, a" to "A" in the first sentence.

Merged paragraph with the preceding paragraph.

Chapter 1, Two Views of Deciding Well, last paragraph

"Modern economists call people who act according to the temporal view of deciding well "rational." In contrast, we commonly call people who act according to the timeless view "wise.""

was deleted.

Chapter 1, The EOQ/RTS Example, first paragraph, first sentence

"We can see the difference between the temporal and timeless views of deciding well in two models for helping us to decide how often to set up machine tools."

was made into a new paragraph and changed to:

"Modern economists call people who act according to the temporal view of deciding well "rational." In contrast, we commonly call people who act according to the timeless view "wise." We can see the difference between acting *rationally* and acting *wisely* in two models for helping us to decide how often to set up machine tools."

Chapter 4, The Sovereign Story of Timeless Science, last paragraph

Changed "ever better" to "ever more wisely" in the third sentence.

Changes in Version 2008.08.20

Preface, eighth paragraph, last sentence

"Beliefs about how we fit into the whole help us to decide well."

was changed to:

"When we expand the scope of the problems we face to the limits of imagination, a timeless structure emerges. This structure can help us find better problems to solve."

Chapter 2, Wealth, first paragraph

Changed "actually need" to "truly need" in the last sentence.

Chapter 2, Virtuous Circles, last paragraph, second sentence

"Pursuing the virtuous circle of pleasure and joy creates wealth."

was changed to:

"We live well by pursuing the virtuous circle of pleasure and joy."

Chapter 2, Wisdom, third and fourth paragraphs

Merged these two paragraphs.

Chapter 3, The Curious End of Believing Well, fifth paragraph

Moved the footnote from the end of the third sentence to the end of the paragraph.

Chapter 3, Computer Models, last paragraph, footnote

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Changed "This statement conflicts" to "This conflicts" in the first sentence.

Chapter 3, A Tale of Revolutions, first paragraph, all but first sentence

"Four years later, in the midst of a war that had spread from North America to the Indian subcontinent, a retired printer turned diplomat shared his thoughts on the future of science with a preacher friend:

"The rapid progress *true* science now makes, occasions my regretting sometimes that I was born so soon. It is impossible to imagine the height to which may be carried, in a thousand years, the power of man over matter. We may perhaps learn to deprive large masses of their gravity and give them absolute levity, for the sake of easy transport. Agriculture may diminish its labor and double its produce; all diseases may be by sure means prevented or cured, not excepting even that of old age, and our lives lengthened at pleasure even beyond the antediluvian standard. O that moral science were in a fair way of improvement, that men would cease to be wolves to one another, and that human beings would at length learn what they now improperly call humanity!"²⁸

Thus did Benjamin Franklin share his plea for a timeless concept of science with his fellow amateur scientist, Joseph Priestley. Regrettably, Franklin's plea went against Smith's economic logic, which calls for us to please ourselves, not to decide well.²⁹"

"²⁸ Franklin, Benjamin, *The Works of Benjamin Franklin*, edited by Jared Sparks, (Chicago: Townsend MacCoun, 1882), vol. VIII, p 418. Searchable text available in Google books, (2 August 2008)."

"²⁹ This is not to say that Adam Smith did not consider moral philosophy, which he did in his first great work, *The Theory of Moral Sentiments*. It is only to say that Smith based his economics on how we seek to please ourselves rather than on how we seek to decide well."

were deleted.

Chapter 3, A Tale of Revolutions

Merged the two paragraphs into one. Merged the section into the previous section, *A Crude Look at the Whole*.

Chapter 4, A Tale of Revolutions, first paragraph, all but first sentence

"We can see Franklin's desire for a timeless approach to science in his February, 1780 letter to fellow amateur scientist Joseph Priestley, which contains pleas for expanding the scope of the true sciences in time and for expanding the scope of science into the realm of moral philosophy:

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"The rapid progress *true* science now makes, occasions my regretting sometimes that I was born so soon. It is impossible to imagine the height to which may be carried, in a thousand years, the power of man over matter. We may perhaps learn to deprive large masses of their gravity and give them absolute levity, for the sake of easy transport. Agriculture may diminish its labor and double its produce; all diseases may be by sure means prevented or cured, not excepting even that of old age, and our lives lengthened at pleasure even beyond the antediluvian standard. O that moral science were in a fair way of improvement, that men would cease to be wolves to one another, and that human beings would at length learn what they now improperly call humanity!"⁴

"⁴ Franklin, Benjamin, *The Works of Benjamin Franklin*, edited by Jared Sparks, (Chicago: Townsend MacCoun, 1882), vol. VIII, p 418. Searchable text available in Google books, (2 August 2008)."

Chapter 4, The Sovereign Story of Timeless Science, first paragraph

Changed "safe" to "seaworthy" in the last sentence.

Chapter 4, The Sovereign Story of Timeless Science, last paragraph

"From the timeless view of deciding well, the sovereign rights story of timeless science is nothing more than a refinement of the sovereign rights story of the Declaration. The Declaration story calls for us to pursue happiness justly." In contrast, the timeless science story calls for us to pursue happiness justly *ever more wisely*." The promise of the sovereign story of timeless science is to improve the overall quality of decision-making, thereby yielding the greatest progress toward the timeless end of a good life for all with the least amount of turbulence in the flow of resources. Supported by good policies, this sovereign rights story should fulfill its promise. A ship of state so built, handled well, should cut through turbulent seas like no other."

was changed to:

"From the timeless view of deciding well, this sovereign rights story is nothing more than a refinement of the sovereign rights story of the Declaration. The Declaration story calls for us to pursue happiness justly.⁹ In contrast, this story calls for us to pursue happiness justly *ever more wisely*.¹⁰ Supported by good policies, it should improve decision quality more than any other. A ship of state built along these lines should cut through turbulent seas like no other."

Appendix A, The Farther Reaches of Living Well, second paragraph

Changed "is living" to "is a matter of living" in the last sentence.

Appendix A, The Farther Reaches of Living Well, last paragraph

Changed "scientific approach" to "modern scientific approach" in the second sentence.

Changes in Version 2008.08.23

Entire Document, text footnotes with references

Incorporated references into text rather than having the reference at the end of the text. In the HTML version, these include (1) the fourth footnote in the first chapter, (2) the third footnote of the second chapter, (3) the nineteenth footnote in the third chapter, (4) the tenth footnote of the fourth chapter, and (5) the sixteenth footnote in the fourth chapter. Note that the footnote numbers will be one less for chapters with heading references in the Word version. Made a minor change to the third footnote in the second chapter regarding the difference between high transaction cost versus high fixed cost, low variable cost trade relation distinction.

Chapter 1, Two Views of Deciding Well, fourth paragraph, footnote

Changed "To decide well is also" to "Here again, to decide well is" in the last sentence.

Chapter 3, Refining Stories, fourth paragraph

Changed "and" to "and" in the last sentence.

Chapter 4, The Explicit Experiment, third paragraph

Deleted the clause: ", which contains pleas both for expanding the scope of the true sciences in time and for expanding the scope of science into the realm of moral philosophy" from the first sentence.

Moved entire paragraph into its footnote and placed the footnote at the end of the preceding paragraph.

Chapter 4, The Explicit Experiment, last paragraph

Changed "timeless view of deciding well" to "timeless view" in the sixth sentence.

Chapter 4, The Sovereign Story of Timeless Science, last paragraph

Changed "A ship of state" to "Handled well, a ship of state" in the last sentence.

Chapter 4, Tax Well, first paragraph, last sentence

"Policymakers ought to give as much attention to how they tax as to how they spend."

was changed to:

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"From the temporal view, the power to tax is the power to destroy. Taxing owners of houses based on the number of windows will reduce the number of windows in houses. Similarly, taxing medical researchers based on the number of animals they use in their experiments will reduce the number of animals used in medical experiments.

"From the timeless view, the power to tax is the power to induce the creation and use of particular knowledge. Taxing the number of windows in houses will induce the creation and use of knowledge of how to live with fewer windows. Similarly, taxing the number of animals used in medical experiments will induce the creation and use of knowledge of how to experiment using fewer animals. Taxing, like restricting speech or actions, affects how we create and use knowledge. The embedded mistakes from taxing foolishly are just as real, and just as dangerous, as those from restricting speech or actions foolishly.¹⁴"

"¹⁴ Modern examples of taxing decisions leading to major catastrophes include the failure of governments to consider the true costs of petroleum products. The foolishness of subsidizing petroleum fuel prices is obvious. Less obvious is the foolishness of the United States Congress not to consider the cost of maintaining world-wide order by threat of arms when determining taxes. Arrested world-wide development due to high fuel prices and the rise of petro-state dictators are far more "clear and present" dangers than the threat of man-made global warming."

Chapter 4, Promote Savings for Welfare, last paragraph, last footnote

Changed "freely available to everyone else" to "knowable to all" in the third sentence.

Changes in Version 2008.08.30

Acknowledgments, second paragraph, first four sentences

"The first three were Pomona College professors. Frederick Sontag pushed me never to stop becoming more than I am. For a third of a century Fred has been extremely generous with his most precious resource, his time. James Likens often told us that social scientists tell many stories about this or that complex phenomenon. Jim also told us that economists do not do dynamics well. Gordon Douglass exposed me to methodology, an activity so dangerous to the emotional health of economists that George Stigler once joked that economists ought to leave it to the end of their careers. My last semester in college, I took an independent study course in human capital theory from Gordon."

were changed to:

"The first three were Pomona College professors Frederick Sontag, James Likens, and Gordon Douglas. Fred pushed me never to stop becoming more than I am. For a third

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of a century he has been extremely generous with his most precious resource, his time. Jim often told us that social scientists tell many stories about this or that complex phenomenon. He also told us that economists do not do dynamics well. My last semester in college, I took an independent study course in human capital theory from Gordon. This course exposed me to methodology, a subject so dangerous to the emotional health of economists that George Stigler once joked that economists ought to leave it to the end of their careers."

Acknowledgments, third paragraph

Changed "professors at the Stanford Graduate School of Business" to "Stanford Graduate School of Business professors" in the first sentence.

Acknowledgments, seventh paragraph

Changed "simple, common words" to "simple, common language" in the last sentence.

Preface, ninth paragraph

Changed "science should be based" to "we should base science" in the first sentence.

Preface, ninth paragraph

Changed "the timeless concept of deciding well" to "this timeless concept" in the fourth sentence.

Changed "this timeless concept" to "it" in the fourth sentence.

Chapter 1, Two Useful Views of Deciding Well, first four paragraphs

"Useful worldviews are views of the world that help us achieve our *ends* (goals). We may group useful worldviews into two types based on whether their ends are *temporal* or *timeless*.⁴ Temporal ends are goals that concern events. Timeless ends are goals that concern processes. Winning a basketball game is a temporal end. Playing basketball well is a timeless end. The difference between a temporal end and a timeless end is the difference between arriving at a destination and heading in a direction.

"We base useful views of the world on the concepts that define ends and *excellence in means*. From a temporal view, we base excellence in means on what we know and what we might learn that is useful for solving the problem at hand. We care about what we may learn that is useful for more than solving the problem at hand. From a timeless view, we base excellence in means on what we know and on what we may learn that is useful in pursuing our timeless end. We care about what we may learn that is useful for more than solving the problem at hand.

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"We can see this difference in the temporal and timeless views of deciding well. From the temporal view of deciding well, excellence in means is excellence in solving temporal problems. We commonly call excellence in solving temporal problems *efficiency*. To decide well is to decide efficiently. A formal decision *event* consists of (1) formulating alternatives; (2) evaluating alternatives; (3) choosing an alternative; and (4) implementing the chosen alternative. To decide well is to decide perfectly.⁵ In modern economic terms, our actions reveal our preferences.

"From the timeless view of deciding well, excellence in means is not only excellence in solving temporal problems but also excellence in choosing temporal problems to solve. We commonly call excellence in choosing temporal problems to solve *effectiveness*. To decide well is to decide both efficiently and effectively. A formal decision *process* is the endlessly repeating cycle of (1) finding a problem to solve based on the timeless end of the process; (2) formulating alternative solutions to the chosen problem; (3) evaluating these alternatives; (4) choosing an alternative; (5) implementing the chosen alternative; and (6) learning from the experience. To decide well is *not* to decide perfectly.⁶ We make mistakes. We learn from our mistakes. Waste is a regrettable by-product of learning-by-doing."

were changed to:

"Useful worldviews are views of the world that help us achieve our *ends* (goals). We may group useful worldviews into two types based on whether their ends are *temporal* or *timeless*.⁴ Temporal ends are goals that concern events; timeless ends are goals that concern processes. Winning a basketball game is a temporal end; playing basketball well is a timeless end. Living today well is a temporal end; living well is a timeless end. Again, temporal ends concern events; timeless ends concern processes."

"Temporal and timeless useful worldviews differ in their concepts of *excellence in means* as well as in their concept of ends. From the temporal view, excellence in means is excellence in solving problems. Modern economists commonly call excellence in solving problems *efficiency*. To decide well is to decide efficiently.

"From a timeless view, excellence in means is both excellence in solving temporal problems and excellence in choosing temporal problems to solve. Managers commonly call excellence in solving temporal problems *efficiency* and excellence in choosing temporal problems to solve *effectiveness*. To decide well is to decide both efficiently and effectively.

"We base the temporal concept of excellence in means on what we know and on what we might learn that is useful in solving the problem at hand. In contrast, we base the timeless concept of excellence in means on what we know and on what we may learn that is useful in pursuing our timeless end. We can see this difference in formal decision-making. From the temporal view, a formal decision *event* consists of (1) formulating alternatives; (2) evaluating alternatives; (3) choosing an alternative; and

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(4) implementing the chosen alternative. To decide well is to decide perfectly.⁵ In modern economic terms, our actions reveal our preferences.

"From the timeless view, a formal decision *process* is the endlessly repeating cycle of (1) finding a problem to solve based on the timeless end of the process; (2) formulating alternative solutions to the chosen problem; (3) evaluating these alternatives; (4) choosing an alternative; (5) implementing the chosen alternative; and (6) learning from the experience. To decide well is *not* to decide perfectly.⁶ We make mistakes. We learn from our mistakes. Waste is a regrettable by-product of learning-by-doing."

Chapter 1, Two Useful Views of Deciding Well, last two paragraphs

Merged the last two paragraphs.

Chapter 1, The EOQ/RTS Example, fifth paragraph

Changed "the most efficient choice is not always the best choice" to "the best choice is not always the (temporally) efficient choice" in the first sentence.

Chapter 2, Introduction, second paragraph

Changed "common maxim" to "modern maxim" in the last sentence.

Chapter 2, Alternatives to Living Well, first paragraph, last sentence

"In short, it makes them vulnerable to acting compulsively."

was deleted.

Chapter 2, Alternatives to Living Well, last paragraph, last three sentences

Changed "(joy/pleasure-in-being)" to "(desire for joy/pleasure-in-being)" and "(pleasure/pleasure-in-acting)" to "(desire for pleasure/pleasure-in-acting)" in the fourth sentence.

"In the Taoist tradition, living well is a matter of maintaining a dynamic balance of *yin* (joy/pleasure-in-being) and *yang* (pleasure/pleasure-in-acting). Those who pursue pleasure have too much *yang*. Those who pursue nothing have too much *yin*."

were changed to:

"In the Taoist tradition, living well is a matter of balancing *yin* and *yang*. In this context, *yin* is the desire for joy/pleasure-in-being; *yang* is the desire for pleasure/pleasure-in-acting. When we have too much *yang*, we pursue pleasure too

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much. When we have too much *yin*, we pursue joy too much. When *yin* and *yang* are in balance, we pursue the virtuous circle of pleasure and joy."

Chapter 2, Human Capital, Work, and Leisure, last paragraph, end

Added the sentence:

"In religious terms, finding our true calling is a blessing."

Chapter 2, Trade, first paragraph, footnote

Changed "As" to "From the temporal view of modern economics, as" in the second sentence.

Changed "More accurately, they" to "In contrast, from the timeless view of deciding well, commercial organizations" in the second sentence.

Chapter 3, The Curious End of Believing Well, third paragraph

Changed "our system of concepts" to "the concepts underlying our beliefs" in the second sentence.

Chapter 3, The Curious End of Believing Well, fourth paragraph

Changed "reduce our sensations to words" to "reduce our sensations to concepts" in the second sentence.

Chapter 3, The Curious End of Believing Well, sixth paragraph

Changed "these and more" to "these things and more" in the last sentence.

Chapter 3, The Curious End of Believing Well, ninth paragraph, fourth and fifth sentences

"This is not a rational process. It is a religious one."

were changed to:

"This is not a rational process; it is a religious one."

Chapter 3, *The Ring of Truth*, third paragraph

"This belief is consistent with the timeless concepts of pleasure (pleasure-in-acting) and joy (pleasure-in-being) put forth in the second section: *beauty is the quality of objects whose contemplation yields not only pleasure but also the joy that comes from improving how well our beliefs fit together into a coherent whole.*"

were changed to:

"Combining this ancient, poetic belief with the timeless concepts of pleasure and joy yields a timeless concept of beauty: *beauty is the quality of objects whose contemplation yields not only pleasure but also the joy that comes from improving how well our beliefs fit together into a coherent whole.*"

Chapter 3, The Ring of Truth, last paragraph

Changed "Beauty" to "beauty" in the first sentence.

Changed "From the timeless view" to "In contrast, from the timeless view" in the first sentence.

Chapter 3, Refining Everyday Thinking, fifth paragraph

Added " $(S_2 \cap S_3)$ " to the first sentence.

Chapter 3, Refining Deciding Well, second paragraph, last footnote

Changed "we" to "we, as a collective," in the last sentence.

Chapter 3, *Refining Stories*, third paragraph

Changed "it often causes" to "it causes" in the fourth sentence.

Deleted the seventh sentence: "When we act foolishly in our private lives, the results are often pathetic but rarely tragic."

Deleted the ninth sentence: "When they act foolishly, the results are often tragic."

Chapter 3, Refining Stories, fifth paragraph

Changed "efficiency" to "the temporal concept of efficiency" in the fourth sentence.

Changed "We also" to "Further, we" in the fourth sentence.

Changed "caves" to "tribal caves" in the last sentence.

Chapter 3, Recursive Failures, first paragraph, footnote

Changed "intellectuals" to "modern intellectuals" in the first sentence.

Chapter 4, Sovereignty, first paragraph

Changed "group" to "group of intelligent beings" in the first sentence.

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Chapter 4, Sovereignty, third paragraph

Changed "had to maintain" to "needed" (2 occurrences) and "have to maintain" to "need" in the second sentence.

Changed "must have" to "need" in the third sentence.

Changed "The need for this coercive power" to "This need" in the last sentence.

Chapter 4, The Sovereign Story of Timeless Science, second paragraph

Changed "All intelligent life has" to "All intelligent beings have" in the second sentence of the sovereign rights story.

Chapter 4, The Sovereign Story of Timeless Science, last paragraph

Changed "the timeless view" to "view of timeless science" in the sixth sentence.

Changed "built along these lines" back to "so built" in the last sentence.

Chapter 4, The Sovereign Story of Timeless Science, last paragraph, first footnote

Changed "this most clearly" to "this corruption most clearly" in the second sentence.

Chapter 4, Control the Money Supply Passively, first paragraph, footnote

Changed "this power" to "the power to expand the money supply" in the first sentence.

Chapter 4, Promote Savings for Welfare, last paragraph, footnote

Deleted the first sentence: "From the timeless view of deciding well, we owe a debt to those who created the knowledge that we use at no cost."

Changed "a universal welfare savings plan and highly progressive taxation" to "the universal welfare savings plan and highly progressive taxation solution" in the last sentence.

Appendix A, Introduction, first paragraph

Changed "unjust" to "unjust, unethical, or unwise" in the fifth sentence.

Appendix A, The Farther Reaches of Living Well, second paragraph

Changed "Maslow" to "He" in the second sentence.

Appendix A, The Farther Reaches of Living Well, fourth paragraph

Changed "the study of" to "identifying" in the second sentence.

Changed "Maslow" to "He" in the last sentence.

Appendix A, Schweitzer's Universal Spiritual Need, second paragraph

"Schweitzer saw two means of satisfying our need for mystical oneness. *Ethical mysticism* is the union that comes through embracing the world and life. *Magical mysticism* is the union of self with the infinite Being that comes from renouncing the world and life.³ In response to the suffering of others, ethical mysticism evokes sympathy; magical mysticism evokes detachment."

was changed to:

"Schweitzer saw two means of satisfying the need for mystical oneness, *ethical* and *magical mysticism*. Ethical mysticism is the union that comes through embracing the world and life. Magical mysticism is the union of self with the infinite Being that comes from renouncing the world and life.³ We can see the difference between these two means to mystical oneness in how people respond to the suffering of others. Ethical mysticism calls for us to feel the suffering of others, which encourages us to help those who suffer. Magical mysticism calls for us to deny the reality of the world that we are trying to leave behind. In response to suffering, ethical mysticism evokes sympathy; magical mysticism evokes detachment."

Appendix A, *Schweitzer's Universal Spiritual Need*, third paragraph, last two sentences

"When magical mysticism prevails, worldly affairs suffer. When the ethical system prevails, magical mysticism loses favor."

were changed to:

"When magical mysticism prevails, worldly affairs suffer; and when the ethical system prevails, magical mysticism loses favor."

Appendix A, *Heroic Death*, last paragraph

Changed "The worst" to "The worst leaders" in the fifth sentence.

Changed "Those" to "Leaders" in the last sentence.

Appendix B, Smoothing Flows, second paragraph, last two sentences

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"Unlike other batch systems, managers can control its operational complexity by varying the tightness of its flexible links. They do so by adding or removing WIP from these links."

was changed to:

"Unlike other batch systems, managers can vary the tightness of its flexible links by adding or removing WIP. This allows managers to stretch the control system to accommodate complex problems without increasing complexity at the team member level."

Appendix B, Smoothing Flows, last six paragraphs

"Satisfying customer needs ever better creates complex production problems. Managers devise and put into place crude solutions to these problems based on their ideas of how best to fold in lines. These crude solutions create uneven flow. Managers buffer most of this uneven flow by adding WIP inventory to flexible links.

"If the managers add too much WIP, there will be no workflow problems to solve. Without a problem to solve there can be no improvement. Managers correct this by removing WIP from flexible links.

"If the managers add too little WIP, the resulting flood of workflow problems overwhelms the team. Managers correct this by adding WIP to flexible links.

"If the managers add the right amount of WIP, there will be just enough problems for the team to solve while they produce. Solving these problems smoothes the uneven flow and embeds useful knowledge into procedures, machine design, trading relations, and product design.

"Once things are running smoothly, managers remove WIP from one or more flexible links. This uncovers problems that create uneven flow. The team solves these problems.

"Managers continue the process of removing WIP from flexible links until the team can find no more problems that it is able to solve."

were changed to:

"Managers increase WIP to accommodate such complex problems as folding in parts of the line or removing scarce resources from the process. They then begin reducing WIP. This creates uneven flow problems. The team adapts to the stress of uneven flow by finding and solving problems that cause uneven flow. Too little stress yields little new knowledge; too much stress overwhelms the team; the right amount of stress yields the greatest new knowledge without burning out the team. Managers continue reducing WIP until the team can find no more problems that the team is able to solve."

Appendix B, Inducing Knowledge, second paragraph

Changed "fails" to "fails (flows unevenly)" in the last sentence.

Changed "the process" to "it" in the last sentence (2 occurrences).

Appendix B, *Inducing Knowledge*, third paragraph

Changed "scarce resources" to "scarce resources (machines, labor, or time)" and "complex process" to "line" in the last sentence.

Changed "the process" to "it" in the last sentence (2 occurrences).

Changes in Version 2008.09.04

Preface, third paragraph

Changed "want to know" to "need to know in order to believe well" in the second sentence.

Changed "want to know" to "need to know" in the last sentence.

Preface, fourth paragraph

Changed "want to know" to "need to know in order to believe well" in the first sentence.

Preface, seventh paragraph

Changed "the good" to "wisdom" in all (3 occurrences).

Preface, ninth paragraph

Changed "this timeless concept" to "the timeless concept of deciding well" in the fifth sentence.

Changed "it" to "the timeless concept of deciding well" in the sixth sentence.

Chapter 1, Two Views of Deciding Well, second paragraph

Deleted the phrase: "as well as in their concept of ends" from the first sentence.

Chapter 2, Introduction, title

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Changed title to "Tools for Living Well."

Chapter 2, Tools for Living Well, third paragraph

Changed "tools" to "intellectual tools" in the first sentence (2 occurrences).

Changed "ones" to "tools" in the second sentence.

Chapter 3, Introduction

Merged into The Curious End of Believing Well.

Chapter 3, The Curious End of Believing Well, new second paragraph

Changed "is" to "ought to be" in the first sentence.

Chapter 3, The Curious End of Believing Well, new fifth paragraph

Changed "these questions usually involves claims to values that transcend the problem at hand" to "the last two questions usually involves claims to values" in the last sentence.

Chapter 3, Refining Everyday Thinking, second to last paragraph

Changed "the ring of Truth rather than the Truth per se" to "the ring of Truth (Beauty) rather than the Truth itself" in the first sentence.

Chapter 4, Introduction

Merged into Sovereignty.

Chapter 4, Sovereignty, new first paragraph, first sentence

"Governing any group of intelligent beings living or working together is a matter of managing rights and responsibilities."

was to:

"From the timeless view of deciding well, governing well is a matter of managing rights and responsibilities well."

Chapter 4, Sovereignty, last paragraph

Changed "holder" to "holders" in the first sentence.

Chapter 4, The Explicit Experiment, first paragraph

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Changed "sovereign story" to "sovereign rights story" in the first sentence (2 occurrences).

Chapter 4, The Explicit Experiment, fifth paragraph

Changed "citizens" to "the people of the United States" in the first sentence.

Chapter 4, The Explicit Experiment, last paragraph, footnote

Changed "the Russian Empire, Italy, and Germany into full-blown socialism" to "the Russian Empire into international socialism, or Italy and Germany into national socialism" in the first sentence.

Chapter 4, The Sovereign Story of Timeless Science, title

Changed "The" to "A" in the title.

Chapter 4, A Sovereign Story of Timeless Science, first paragraph

Changed "sovereign story" to "sovereign rights story" in the first sentence.

Changed "sovereign stories" to "sovereign rights stories" in the second sentence.

Chapter 4, A Sovereign Story of Timeless Science, last paragraph

Changed "it" to "this sovereign rights story" in the fourth sentence.

Changed "sovereign story" to "sovereign rights story" in the first sentence of the first footnote.

Chapter 4, Tax Well, second paragraph, footnote

"¹⁴ Modern examples of taxing decisions leading to major catastrophes include the failure of governments to consider the true costs of petroleum products. The foolishness of subsidizing petroleum fuel prices is obvious. Less obvious is the foolishness of the United States Congress not to consider the cost of maintaining world-wide order by threat of arms when determining taxes. Arrested world-wide development due to high fuel prices and the rise of petro-state dictators are far more "clear and present" dangers than the threat of man-made global warming."

was deleted.

Appendix A, Balanced Excellence, first paragraph

Changed "Life-revering religions" to "Religions that help us revere life well" in the first sentence.

Changes in Version 2008.09.06

Preface, third paragraph

Changed "need to know" to "need to know in order to believe well" in the last sentence.

Preface, ninth paragraph, third through last sentences

"I go on to apply this distinction to deciding well. In the second section, I apply the timeless concept of deciding well to the timeless end of living well. In the third, I apply the timeless concept of deciding well to the timeless end of believing well. In the last section, I apply the timeless concept of deciding well to the timeless end of governing well. To change the way we decide is to change the way we choose to live, choose to believe, and choose to govern and be governed."

were changed to:

"I go on to develop a timeless concept of deciding well. In the balance of the work, I apply this concept to the ends of living well, believing well, and governing well. To change the way we decide is to change the way we choose to live, choose to believe, and choose to govern and be governed."

Chapter 1, The Need for Timeless Views, last paragraph

Changed "timeless view" to "timeless view of deciding well" in the third sentence.

Chapter 2, Consumption, first paragraph

"Consuming is the process of using wealth to achieve our ends. From the temporal view of modern economics, consuming is the process of using wealth to satisfy our wants. Hence, winning a fortune in the lottery is always good. From the timeless view of deciding well, consuming is the process of using wealth to live well. Hence, winning a fortune in the lottery can be bad if the winner is heading down a dark path. Understanding this difference calls for a deeper understanding of pleasure and pain."

was changed to:

"Consuming is the process of using wealth to achieve our ends. From the temporal view of modern economics, this end is the temporal end of satisfying our wants. Our actions reveal our preferences. Hence, winning a fortune in the lottery is always good for us. From the timeless view of deciding well, this end is the timeless end of living well. We make mistakes. Hence, winning a fortune in the lottery can be bad for us if

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we are heading down a dark path. Understanding this difference calls for a deeper understanding of pleasure and pain."

Chapter 2, Pleasure and Pain, first paragraph, first sentence

"Pleasure and pain are mental signals (or absence of mental signals) that help guide us to undertake good activities and avoid bad ones."

was changed to:

"Pleasure and pain are mental signals² that help guide us to undertake good activities and avoid bad ones."

"² This may include the absence of mental signals."

Chapter 2, Wisdom, first paragraph

Changed "moderate" to "a moderate amount of" in the last sentence.

Chapter 2, Wisdom, third paragraph

"Deprivation, which is the condition of having unsatisfied needs, can overwhelm wisdom. It can impair perception, intuition, and reason through panic, delirium, and illness. It can bias our perception and intuition. It can retard learning. It can cause strong emotions or appetites, which can lead to the loss of our ability to contain our emotions or appetites. We face a variety of potential vicious circles involving wisdom and deprivation. Collectively these form the cycle of poverty."

was changed to:

"Deprivation, which is the condition of having unsatisfied needs, tends to overwhelm wisdom. It tends to bias our perception and intuition; cause strong emotions and appetites; retard learning; and, in cases of panic and delirium, impair perception, intuition, and reason. These tendencies create vicious circles of deprivation and deciding poorly. Together these circles form the cycle of poverty."

Chapter 2, Alternatives to Living Well, second paragraph

Changed "vicious cycle of poor decision-making and deprivation, which we commonly call poverty" to "vicious cycle of poverty" in the last sentence.

Merged paragraph with the preceding paragraph.

Chapter 2, Three Mistakes, first paragraph

Changed "involved" to "involves" in the last sentence.

Chapter 2, Three Mistakes, last two paragraphs

"The third mistake is the belief that competition is the opposite of cooperation. When excellence calls for cooperation, promoting competition tends to promote cooperation. Consider competition in team sports: teamwork tends to rise with the closeness of the score.

"In business as in sports, competition tends to increase cooperation. Shoppers in the Soviet Union wasted billions of hours standing in lines. Many purchases involved standing in line three times: once to select an item, a second time to pay for it, and a third to collect it. Soviet shoppers endured this because they had no choice. In contrast, competition caused early twentieth-century American merchants to invent stores in which shoppers cooperate with merchants by collecting the items they want to buy. Such self-service stores save shoppers time and money."

were changed to:

"The third mistake is the belief that competition is the opposite of cooperation. When excellence calls for cooperation, promoting competition tends to promote cooperation. Shoppers in the Soviet Union wasted billions of hours standing in lines. Many purchases involved standing in line three times: once to select an item, a second time to pay for it, and a third to collect it. Soviet shoppers endured this because they had no choice. In contrast, competition caused early twentieth-century American merchants to invent stores in which shoppers cooperate with merchants by collecting the items they want to buy. Such self-service stores save shoppers time and money. Some American merchants have recently taken this one step further by allowing customers to pay for their items in self-checkout lines."

Chapter 3, Recursive Failures, first paragraph

Added the following sentences before the last sentence:

"Also consider the statement, "I can benefit by violating the trust others put in me." If enough people use this story to guide their actions, everyone will soon put less trust in others."

Chapter 4, The Explicit Experiment, fourth paragraph

Changed "puts forth" to "offers" in the second sentence.

Chapter 4, The Explicit Experiment, last paragraph, footnote

Deleted the last sentence: "The First Amendment has not stopped true believers in theistic justice or true believers in social justice from seeking to establish their religion as the state religion."

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Changed "political experiment" to "timeless political experiment" in the new first sentence.

Chapter 4, The Sovereign Story of Timeless Science, first paragraph

Moved fourth sentence back to the end of the paragraph.

Appendix A, Deciding Beautifully, first paragraph, last sentence

"We ought to use only those tools that aim at the timeless end of revering life well."

was changed to:

"We ought to use only those tools that aim at the timeless end of revering life well."

Changes in Version 2008.09.09

Preface, ninth paragraph, second, third, and fourth sentences

Changed "concept to the ends of" to "concept to the pursuits of" in the fourth sentence.

Chapter 1, The Need for Timeless Views, last paragraph, end

Added the footnote: "For more on the Toyota production system, see Appendix A."

Chapter 1, The EOQ/RTS Example, fourth paragraph

Changed "where" to "in which" in the sixth sentence.

Chapter 3, The Curious End of Believing Well, sixth paragraph, footnote

Changed "theology (knowledge of the divine)" to "theism (belief in the existence of the divine)" in the third sentence.

Changed "theology" to "theism" in the last sentence.

Chapter 3, The Curious End of Believing Well, fourteenth paragraph, last footnote

Changed "Appendix A" to "Appendix B" in the last sentence.

Chapter 3, Trading Failures, first paragraph, last footnote

"²³ For more on the subject of smoothing flow, see Appendix B."

was deleted.

Chapter 4, The Explicit Experiment, last paragraph, footnote

Changed "theistic justice" to "theological justice" in the last sentence.

Changed "theistic justice" to "theological justice" in the second sentence of the footnote.

Appendices A & B

Switched order of appendices.

Appendix B, Schweitzer's Universal Spiritual Need, third paragraph

"Magical mysticism lies beyond ethics. Where ethics concerns how people live and work together, magical mysticism concerns how a person links directly with the infinite Being. The world and life negation at the core of magical mysticism conflicts with this ethical system. When magical mysticism prevails, worldly affairs suffer; and when the ethical system prevails, magical mysticism loses favor."

was appended to the next paragraph and changed to:

"Magical mysticism concerns how people link directly with the infinite Being."

Changes in Version 2008.09.11

Chapter 2, Tools for Living Well, first paragraph

Changed "help us to pursue" to "help us pursue" in the first and last sentences.

Chapter 3, The Curious End of Deciding Well, first paragraph

Changed "help us to pursue" to "help us pursue" in the first and last sentences.

Chapter 3, The Curious End of Deciding Well, tenth paragraph

Changed "the Truth, Justice, and Beauty" to "the Truth" in the first sentence.

Chapter 3, *The Elephant in the Room*, third paragraph

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Changed "our religious impulse to seek the Creator" to "this religious impulse" in the last sentence.

Chapter 3, Refining Everyday Thinking, second to last paragraph

Changed "the ring of Truth (Beauty)" back to "the ring of Truth" in the first sentence.

Chapter 3, Refining Deciding Well, second paragraph, first footnote

Changed "science" to "believing well" in the last sentence.

Chapter 3, Recursive Failures, first paragraph

Changed "these stories" to "the stories we use to guide our actions" in the last sentence.

Chapter 4, Sovereignty, first paragraph

Changed "help us to pursue" to "help us pursue" in the first and last sentences.

Chapter 4, The Sovereign Story of Timeless Science, last paragraph

Changed "justly *ever more wisely*" to "ever more justly, ever more wisely, and ever more truly" in the third sentence.

Chapter 4, Judge Interventions, last paragraph

Changed "wise" to "profitable" in the last sentence.

Appendix B, *Heroic Death*, third paragraph

Changed "worst leaders" back to "worst" in the fifth sentence.

Appendix B, Deciding Beautifully, first paragraph, last sentence

"We also ought to use only those tools that aim at the highest form of justice that we can imagine. We ought to use only those tools that aim at the timeless end of revering life well."

were changed to:

"We also ought to use only those tools that help us pursue the highest justice we can imagine, only those tools that help us revere life well."

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Changes in Version 2008.09.13

Preface, second paragraph

Changed "theory" to "theory of deciding well" in the sixth sentence.

Preface, ninth paragraph

Changed "this concept" to "this timeless concept" in the fourth sentence.

Chapter 1, Two Views of Deciding Well, second paragraph

Changed "commonly call" to "call" in the third sentence.

Chapter 1, Two Views of Deciding Well, third paragraph

Changed "Managers commonly call" to "Good managers call" in the second sentence.

Chapter 1, The Need for Timeless Views, last paragraph

Changed "Production team" to "Toyota production team" and "what happens at Toyota" to "what they do" in the fourth sentence.

Changed "residents of our age" to "residents of our modern age" in the last sentence.

Chapter 3, The Curious End of Believing Well, last two sentences of the thirteenth paragraph and the fourteenth paragraph

"In theory, we can learn more about Justice by considering how treating others well helps us to pursue the Good and the Truth. However, when we try to learn more about Justice by considering this, we find ourselves continuously returning to the endless pursuits of the Good and the Truth; we find ourselves in a mental hall of mirrors.

"Twentieth-century philosopher John Rawls provides us with a way of putting our ignorance to good use. He asks us to imagine what we should⁶ choose if we were ignorant of the circumstances of our birth.⁷ For this imagined original position of ignorance to produce a *completely just* timeless end, we must consider what timeless end we should want to guide intelligent life if we were *completely ignorant* of the circumstances of our birth, which includes ignorance of what species we will be and into what era we will be born. Under these conditions, we should want all intelligent life to make the best use of knowledge in the pursuit of a good life for all. In other words, we should want all intelligent life to revere life well.⁸ We pursue this timeless end by deciding well."

"⁹ This expansive concept of justice does more than help us satisfy our need to link or re-link with something greater than ourselves. We need other forms of life to live well.

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For example, we need microorganisms to sustain not only our environment but also our bodies. Further, we can learn from virtually every other form of life. For example, we can learn about composite materials from the fangs of sandworms and about biochemical processes from microorganisms living in extreme environments. For more on the subject of revering life well, see Appendix B."

were moved to the end of *The Elephant in the Room* and changed to:

"We seek to know this infinitely large elephant well by deciding well. This calls for pursuing the boundless factors of deciding well. When we try to analyze these various pursuits, we quickly discover that we are in a mental hall of mirrors, from which our tried and true techniques cannot help us escape.

"Twentieth-century philosopher John Rawls provides us with a technique that can help us think our way out of this mental hall of mirrors. He asks us to imagine what we should⁶ choose if we were ignorant of the circumstances of our birth.⁷ For this imagined original position of ignorance to produce a *completely just* timeless end, we must consider what timeless end we should want to guide intelligent life if we were *completely ignorant* of the circumstances of our birth, which includes ignorance of what species we will be and into what era we will be born. From behind this veil of ignorance, we should want all intelligent life to revere life well.⁸ We pursue this timeless end by deciding well."

"⁹ To revere life well is to pursue the timeless end of a good life for all. This not only helps us satisfy our need to link or re-link with something greater than ourselves, but also helps us pursue the timeless end of living well. We need other forms of life to live well. For example, we need microorganisms to sustain not only our environment but also our bodies. Further, we can learn from virtually every other form of life. For example, we can learn about composite materials from the fangs of sandworms and about biochemical processes from microorganisms living in extreme environments. For more on the subject of revering life well, see Appendix B."

Chapter 3, The Curious End of Believing Well, thirteenth paragraph and new fourteenth paragraphs

Merged these two paragraphs.

Chapter 3, Recursive Failures, first paragraph

Changed "This two-way relation" to "This two-way relation between the stories that we use to guide our actions and reality" in the last sentence.

Chapter 3, Recursive Failures, second paragraph

Changed "our potential" to "the potential" in the last sentence.

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Chapter 3, Recursive Failures, third and fourth paragraphs

"To reduce this potential for catastrophe, we need to base the stories that we use to guide our actions on timeless elements. Chief among these are (1) the problem of induction, (2) the inexhaustibility of knowledge, and (3) our religious need to become part of something infinitely greater than ourselves. Excluding these elements greatly increases our risk of suffering environmental disasters, financial collapses, religious strife, and other catastrophes. We can aspire to be wise by including these elements or we can pretend to be certain by excluding them.

"A good example of pretending to be certain is the modern economic national accounting system, which uses a temporal rather than a timeless concept of wealth. Imagine a pill that makes people decide better. Releasing this product would change how people decide to live. Some parts of the economy would shrink and other parts would grow. Resources would flow from the shrinking parts to the growing ones. The immediate effect would be a fall in aggregate production and a rise in unemployment. Modern economic science would portray one of the greatest advances in human history as a disaster."

were changed to:

"We can aspire to be wise by using timeless stories to find temporal problems or pretend to be certain by using temporal stories to find problems. A good example of pretending to be certain is the modern economic national accounting system. Imagine a pill that makes people decide better. Releasing this product would change how people decide to live. Some parts of the economy would shrink and other parts would grow. Resources would flow from the shrinking parts to the growing ones. The immediate effect would be a fall in aggregate production and a rise in unemployment. Modern economic science would portray one of the greatest advances in human history as a disaster."

Chapter 4, The Explicit Experiment, second paragraph

Changed "an explicit proposition to be tested" to "a timeless experiment" in the fourth sentence.

Chapter 4, The Sovereign Story of Timeless Science, last paragraph, last footnote

Changed "see some evidence" to "find evidence" in the first sentence.

Changes in Version 2008.09.15

Chapter 1, Two Views of Deciding Well, fifth paragraph, last sentence

"Waste is a regrettable by-product of learning-by-doing."

was changed to:

"Deciding well and our understanding of deciding well co-evolve."

Chapter 2, Tools for Living Well, first paragraph

Changed "pursue the timeless end of deciding well" to "decide well" in the first sentence.

Changed "pursue the timeless end of living well" to "live well" in the last sentence.

Chapter 2, Wisdom, first paragraph, first sentence

"The timeless end of life is living well."

was deleted.

Chapter 3, The Curious End of Deciding Well, first paragraph

Changed "pursue the timeless ends of deciding well and living well" to "decide well and live well" in the first sentence.

Changed "pursue the timeless end of believing well" to "believe well" in the last sentence.

Chapter 3, The Curious End of Deciding Well, fifth paragraph

Changed "the last two questions" to "these questions" in the last sentence.

Chapter 3, The Curious End of Deciding Well, tenth and eleventh paragraphs

Merged these two paragraphs.

Chapter 3, The Curious End of Believing Well, last paragraph

Changed "the timeless end of deciding well" to "deciding well" in the first sentence.

Chapter 3, The Ring of Truth, first paragraph

Changed "timeless end of believing well" to "endless pursuit of believing well" in the first sentence.

Chapter 3, The Elephant in the Room, fifth paragraph

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"We seek to know this infinitely large elephant well by deciding well. This calls for pursuing the boundless factors of deciding well. When we try to analyze these various pursuits, we quickly discover that we are in a mental hall of mirrors, from which our tried and true techniques cannot help us escape."

was changed to:

"Again, the endless pursuit of believing well calls for pursuing all of the boundless factors of deciding well. When we try to analyze these various pursuits, we quickly discover that we are in a mental hall of mirrors, from which our tried and true techniques cannot help us escape. When we try to learn more about one pursuit by analyzing the other pursuits, we keep returning to our starting point."

Chapter 3, The Elephant in the Room, last paragraph

Changed "deciding well" to "finding and solving beautiful problems" in the last sentence.

Chapter 3, Refining Stories, fifth paragraph, last two sentences

"The timeless end of deciding well calls for us to learn. It calls for us to leave the tribal caves of our ancestors."

were changed to:

"Deciding well calls for us to learn; it calls for us to leave the tribal caves of our ancestors."

Chapter 3, A Crude Look at the Whole, third paragraph

Changed "progress toward the timeless end of revering life well" to "revering life well" in the last sentence.

Chapter 3, Conclusion, first paragraph, first sentence

"This section applied the timeless concept of deciding well to the timeless end of believing well."

was deleted.

Chapter 3, Conclusion, second paragraph

Changed "The timeless end of believing well" to "Deciding well" in the first sentence.

Chapter 4, Sovereignty, first paragraph

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Changed "pursue the timeless ends of deciding well, living well, and believing well" to "decide well, live well, and believe well" in the first sentence.

Changed "pursue the timeless end of governing well" to "govern well" in the last sentence.

Chapter 4, The Sovereign Story of Timeless Science, second paragraph

Changed "pursue the timeless end of deciding well" to "decide well" in the first sentence of the sovereign story.

Changed "to decide well" to "decide well" in the last sentence of the sovereign story.

Appendix B, Deciding Beautifully, first paragraph

Changed "temporal ends" to "problems" in the third and seventh sentences.

Changes in Version 2008.09.16

Chapter 1, Two Views of Deciding Well, second paragraph

Changed "the temporal view" to "a temporal view" in the second sentence.

Chapter 1, Two Views of Deciding Well, third paragraph

Changed "the timeless view" to "a timeless view" in the first sentence.

Chapter 1, Two Views of Deciding Well, fourth paragraph

Changed "the temporal view" to "a temporal view" in the third sentence.

Chapter 1, Two Views of Deciding Well, fifth paragraph

Changed "the timeless view" to "a timeless view" in the first sentence.

Chapter 1, The EOQ/RTS Example, first paragraph

Changed "the timeless view" to "a timeless view" in the first sentence.

Chapter 2, Pleasure and Pain, sixth paragraph, footnote

Added the sentence: "Note that this general definition can accommodate such modern theories as epigenetic development."

Chapter 2, Three Mistakes, first paragraph,

"Three common mistakes hinder the improvement of trade. The first is the belief that we cannot in fact improve the means of trade. This belief tends to blind us to better means of trade. This blindness led John Maynard Keynes to see the slowness of the price of labor to fall in response to a fall in the demand for labor ("sticky wages") as a problem to work around rather than a problem to solve. It also led most Western experts to see the Toyota system as a set of techniques rather than as a means of creating techniques that involves paying workers not only for their skilled hands but also for their trained minds."

was changed to:

"Three common mistakes tend to blind us to better means of trade. The first is the belief that we cannot improve the means of trade. This belief led John Maynard Keynes to see the slowness of the price of labor to fall in response to a fall in the demand for labor ("sticky wages") as a problem to work around rather than a problem to solve. It also led most Western experts to see the Toyota system as a set of techniques rather than as a means of creating techniques that involves paying workers not only for their skilled hands but also for their trained minds. The belief that we cannot improve the means of trade tends to blind us to better means of trade."

Chapter 2, Profit, first paragraph

"Profit is the expected return on deciding well.⁶ We live well by deciding well. We ought to be entrepreneurs in the business of life."

"⁶ We should never use this timeless concept of profit for the temporal task of assessing the quality of decision-making. Paying \$10 for a lottery ticket that has a certain expected value of \$100 is wise regardless of the outcome. Conversely, paying \$100 for a lottery ticket that has a certain expected value of \$10 is foolish regardless of the outcome. Temporal profits are not always the result of deciding well and temporal losses are not always the result of deciding poorly. To attribute temporal profits solely to good decision-making or temporal losses solely to poor decision-making is foolish."

was changed to:

"Profit is the value of acting. From the timeless view of deciding well, profit is the expected return on a decision.⁶ Given the inexhaustibility of knowledge, we can never be certain of the value of what we expect to learn. When we try to measure timeless profit, we must choose whether to consider learning. We can either aspire to be wise by considering learning or pretend to be certain by ignoring it."

⁶ In contrast, temporal profit is the actual return. Actual returns include the return on luck. Paying \$10 for a lottery ticket that has a certain expected value of \$100 is wise

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regardless of the outcome. Conversely, paying \$100 for a lottery ticket that has a certain expected value of \$10 is foolish regardless of the outcome. To attribute actual profits solely to good decision-making or actual losses solely to poor decision-making is foolish."

Chapter 3, The Curious End of Believing Well, fifth paragraph

Changed "the timeless view" to "the timeless view of believing well" in the first sentence.

Chapter 3, The Curious End of Believing Well, seventh paragraph

Changed "the timeless view" to "the timeless view of believing well" in the first sentence.

Chapter 3, *The Ring of Truth*, last paragraph

Changed "the modern view" to "a modern view" in the first sentence.

Changed "the timeless view" to "a timeless view" in the first sentence.

Chapter 3, Refining Everyday Thinking, last paragraph

Changed "the timeless view of deciding well" to "the timeless view of believing well" in the first sentence.

Chapter 3, The Elephant in the Room, last paragraph, last sentence

"We pursue this timeless end by finding and solving beautiful problems."

was deleted.

Chapter 4, Tax Well, first paragraph

Changed "the temporal view" to "a temporal view" in the second sentence.

Chapter 4, *Tax Well*, second paragraph

Changed "the timeless view" to "a timeless view" in the first sentence.

Chapter 4, Promote Savings for Welfare, second paragraph

Changed "Governments best ensure" to "Government best ensures" in the second sentence.

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Changes in Version 2008.09.20

Preface, second paragraph

"I wanted more than these three rules. I wanted a theory of deciding well. I had learned many analytical tools in business school. I knew that these tools could lead me astray by boxing me in with assumptions. I wanted a theory to help me know when the tools that I used to guide my actions were leading me astray. I have since learned that my wish for a theory of deciding well was foolish. Rather than a *theory* of deciding well, I ought to have wished for a *science* of deciding well. I ought to have wished for a method of weeding out members of the set of theories that we use to guide our actions."

was changed to:

"I wanted something more coherent and complete than these three rules. I had learned many analytical tools in business school. I knew that these tools could lead me astray by boxing me in with assumptions. I wanted something to help me know when analytical tools were leading me astray. I have since learned that I ought to have wanted a *science of deciding well*, by which I mean a method of weeding out members of the set of stories that we use to guide our actions."

Preface, third paragraph

Changed "wish" to "desire" in the first sentence.

Chapter 1, The Need for Timeless Views, last paragraph, second footnote

Moved footnote to the end of the previous section, The EOQ/RTS Example.

Chapter 2, Pleasure and Pain, first paragraph, footnote

Added the sentence: "For example, the absence of the signals that our brains interpret as pain when we should feel pain signals us that our nervous system is not working properly."

Chapter 3, The Curious End of Believing Well, ninth paragraph, last four sentences

"In sharp contrast, Aristotle called on us to refine our beliefs using his tool kit for refining beliefs, which we call Aristotelian logic. Further, he split the study of nature and motion, which he called physics, from the study of first causes and principles, which he variously called wisdom, first philosophy, or theology. In modern terms, Aristotle split science from metaphysics. His approach is *rational*, not *wise*."

were changed to:

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"In sharp contrast, Aristotle split the study of nature and motion, which he called physics, from the study of first causes and principles, which he variously called wisdom, first philosophy, or theology. In modern terms, he split science from metaphysics. He also provided us with a tool kit for refining beliefs, which we call Aristotelian logic. His approach is *rational*, not *wise*."

Chapter 3, The Ring of Truth, last paragraph

Changed "to explain" to "explain" in the first sentence.

Changed "to decide well" to "decide well" in the second sentence.

Changed "to shock" to "shock" in the seventh sentence.

Chapter 3, The Elephant in the Room, fifth paragraph

"Again, the endless pursuit of believing well calls for pursuing all of the boundless factors of deciding well. When we try to analyze these various pursuits, we quickly discover that we are in a mental hall of mirrors, from which our tried and true techniques cannot help us escape. When we try to learn more about one pursuit by analyzing the other pursuits, we keep returning to our starting point."

was changed to:

"Again, the endless pursuit of believing well calls for us to pursue all of the boundless factors of deciding well. When we try to analyze these various pursuits, we keep returning to our starting point. We quickly learn that we are in a mental hall of mirrors from which our tried and true techniques cannot help us escape."

Chapter 3, Refining Everyday Thinking, sixth paragraph

Added the sentence:

"See White, Morton, *A Philosophy of Culture: The Scope of Holistic Pragmatism*, (Princeton, New Jersey: Princeton University Press, 2002)."

Chapter 4, Tax Sovereign Story of Timeless Science, last paragraph

Changed "and ever more truly" to "ever more truly, and ever more coherently" in the third sentence.

Appendix B, Deciding Beautifully, first paragraph

Changed "the less the risk" to "the less is the risk" in the sixth sentence.

Changes in Version 2008.09.24

Preface, third paragraph,

"If we base science on what we currently know, the concept of a science of deciding well is nonsense. If we cannot define deciding well, which includes defining our ultimate ends, there can be no science of deciding well. On the other hand, if we base science on what we need to know in order to believe well, there can be a science of deciding well."

was deleted.

Chapter 1, Two Views of Deciding Well, fourth paragraph

Changed "our timeless end" to "a timeless end" in the second sentence.

Chapter 1, Two Views of Deciding Well, fifth paragraph

Changed "problem to solve based on" to "temporal problem to solve that appears to be in line with" in the second sentence.

Chapter 2, Profit, first paragraph

"Profit is the value of acting. From the timeless view of deciding well, profit is the expected return on a decision.⁶ Given the inexhaustibility of knowledge, we can never be certain of the value of what we expect to learn. When we try to measure timeless profit, we must choose whether to consider learning. We can either aspire to be wise by considering learning or pretend to be certain by ignoring it.

⁴⁴⁶ In contrast, temporal profit is the actual return. Actual returns include the return on luck. Paying \$10 for a lottery ticket that has a certain expected value of \$100 is wise regardless of the outcome. Conversely, paying \$100 for a lottery ticket that has a certain expected value of \$10 is foolish regardless of the outcome. To attribute actual profits solely to good decision-making or actual losses solely to poor decision-making is foolish.⁴⁷

was changed to:

"In general, profit is the value of acting. From the temporal view of deciding well, profit is the return on an action or period of action.⁶ From the timeless view of deciding well, profit is the expected return on a decision or series of decisions. Given the inexhaustibility of knowledge, we can never be certain of the value of what we have learned or expect to learn. When we try to measure profit, we must choose whether or not to consider learning. We can either pretend to be certain by ignoring learning or aspire to be wise by including it."

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"⁶ Note that actual returns include the return on luck. Paying \$10 for a lottery ticket that has a certain expected value of \$100 is wise regardless of the outcome. Conversely, paying \$100 for a lottery ticket that has a certain expected value of \$10 is foolish regardless of the outcome. To attribute actual profits solely to good decision-making or actual losses solely to poor decision-making is foolish."

Chapter 3, A Crude Look at the Whole, first two paragraphs

"Imagine free people seeking to decide well. Deciding well creates economic stress, the need to reallocate resources. As the amount of stress rises, people will spend resources responding to it, which will leave them with fewer resources for experimenting with new ways of deciding well. Stress will tend toward a "natural" level. People learn to thrive in winds and survive in gales of creative destruction.

"When it is practical to do so, people will use timeless tools to choose problems and temporal tools to solve these problems. People also use timeless tools to help them identify the things they are likely to need in order to solve unexpected problems. In the endless pursuit of deciding well, these factors are strategic assets."

were changed to:

"Imagine free people pursuing the timeless end of deciding well. Deciding well creates economic stress, the need to reallocate resources. People do not pursue the timeless end of deciding well perfectly. They make mistakes. Poor decisions create greater stress. Some of this stress flows through the visible economic system as turbulence in the flow of economic resources, the symptoms of which include inflation²¹ and unemployment. As the amount of turbulence rises, people spend more resources responding to it, which leaves them fewer resources for deciding well in ways that create stress. If poor decisions only led to turbulence, turbulence would tend toward a "natural" level. However, poor decisions also embed mistakes into networks of knowledge-in-use. Over time, people pursuing the timeless end of deciding well release the stress embedded in these networks. These releases disrupt the "natural" level of turbulence.

"People pursuing the timeless end of deciding well use timeless tools to help them identify the things they are likely to need in order to solve unexpected problems. When it is practical to do so, they also use timeless tools to choose temporal problems and temporal tools to solve these problems. By pursuing the timeless end of deciding well, they learn to thrive in winds and survive in gales of creative destruction."

"²¹ Turbulence wastes resources that would otherwise result in more goods and services. Inflation is the result of too much money chasing too few goods and services."

Changes in Version 2008.09.30

The following changes were made after a review by Michael Lissack. It was clear from his comments that the structure needed work. The largest change was moving a large part of the first section of the third chapter to the first chapter. Another large change was adding an overview section at the end of the first chapter, which allowed the deletion of the somewhat tedious introductory sentences to the third and fourth sentences, as well as the final paragraph to the conclusion of the third chapter.

Preface, fourth paragraph

Changed "definite" to "definite" in the first sentence.

Preface, eighth paragraph,

"The essence of modernism is breaking the whole into parts in order to do something better. We see this process in science (reductionism), philosophy (analysis), and economics (the division of labor). The major disadvantage of breaking the whole into parts is forgetting to consider the whole, especially how we fit into the whole. Despite the fact that this knowledge, like definite knowledge of the transcendental number *pi*, will remain forever beyond our grasp, we must not pass over it in silence. When we expand the scope of the problems we face to the limits of imagination, a timeless structure emerges. This structure can help us find better problems to solve."

was changed to:

"The essence of modernism is the process of breaking an unmanageable whole into manageable parts in order to solve problems better. We see this process in science (reductionism), philosophy (analysis), and economics (the division of labor). A major danger of using this process is forgetting to consider the whole, especially how we may fit into the whole. Despite the fact that knowledge of the whole, like definite knowledge of the transcendental number *pi*, will remain forever beyond our grasp, we must not pass over it in silence. When we expand the scope of the problems we face to the limits of imagination, a structure of timeless values emerges. Knowledge of this structure can help us find better problems to solve."

Preface, ninth paragraph

Changed "My target audience for this work is people" to "I wrote this work for people" in the first sentence.

Changed "I go on to develop" to "From this distinction, I develop" in the second sentence.

Changed "concept" to "decision-making concept" in the third sentence.

Preface, tenth paragraph

Changed "terms and concepts" to "terms (containers for meaning) and concepts (meanings)" in the first sentence.

Chapter 1, Setting Words Aright, first paragraph

Changed "ends" to "ends (goals)" in the last sentence.

Chapter 1, Setting Words Right, second paragraph

Changed "a type" to "one type" in the first sentence.

Inserted the sentence, "It is pattern of bits on a compact disc, not the compact disc, that is knowledge resource.", and a paragraph break after the second sentence.

Chapter 1, Setting Words Right, new third paragraph

Italicized "in use" and "not yet in use" in the first sentence.

Chapter 1, Setting Words Right, last paragraph

Changed "a type" to "one type" in the first sentence.

Added the following following subsection:

"A Holistic Approach to Deciding Well

Deciding is an activity subject to constraints. These constraints include such things as time, clarity of mind, and the quality of intellectual tools. Over countless generations, we have learned many ways of coping with these constraints. We have also learned many ways of thinking about how to cope with these constraints.

"One way of thinking about how we cope with these constraints is to classify the ways that we decide into deliberation (formal decision-making), decision-rules (rules-of-thumb/heuristic methods), and discipline (consciously formed habits). Deliberation is thorough but costly in time and other resources. Decision rules are less thorough but also less costly. Discipline is the least thorough, least costly, but most resistant to the harmful effects of deprivation. Deciding well is often a matter of knowing which of these three methods to use.

"Another way of thinking about how we cope with these constraints is to think deeply about how our mental models of the world mislead us. We normally study these failures on the level of our beliefs about the world. We can also study the failures of our mental models on the level of the concepts that underlie our beliefs.

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"Yet another way of thinking about how we cope with these constraints is to think deeply about how we choose to frame (conceptualize) the world. Consider how we may choose to frame the political divide between classical and modern liberals in the United States. Both groups of liberals believe that we ought to have the freedom to choose what we want, provided that what we want does not constrain the right of others to choose what they want. However, the two groups differ in beliefs about what constraints our choices impose on others. To the classical liberal, these constraints include only those we might directly impose on others by force. To the modern liberal, these constraints include all constraints that keep our fellow citizens from deciding well enough to live decent lives. Economist Thomas Sowell sees this difference in beliefs in terms of how people view constraints on deciding well. From this frame, classical liberals have a constrained view of deciding well, and modern liberals have an unconstrained view of deciding well. Sowell favors the classical liberal view.⁴ In contrast, linguist George Lakoff sees this difference in terms of a metaphor that likens governments to families. From this linguistic frame, classical liberals want governments that treat their citizens as strict fathers treat their children, and modern liberals want governments that treat their citizens as nurturing mothers treat their children. Lakoff favors the modern liberal view.⁵

"The problem of how we choose frames is infinitely deep. The question of which frame we ought to choose leads us to the question of which frame we ought to choose in order to choose which frame we ought to choose. This in turn leads us to the question of which frame we ought to choose in order to choose which frame we ought to choose in order to choose which frame we ought to choose. We can continue this line of questioning without limit. We can never solve this infinitely large problem. We can only pretend to be certain by ignoring it, or aspire to be wise by addressing it.

"As we shall see, we can address the infinitely large problem of choosing frames by expanding the problem of deciding well to infinity. From Sowell's constrained versus unconstrained vision frame, this holistic approach to deciding well calls not only for a constrained view of deciding well, but also for as unconstrained a view of deciding well as we can imagine. We use the constrained view to help us solve given problems and the unconstrained view to help us find the best problems to solve. From Lakoff's metaphors frame, governments are like research managers who help us explore the timeless end of living well, which we do by seeking to live ever more wisely, ever more coherently, ever more truly, and ever more justly. Understanding this holistic approach to deciding well calls for understanding the timeless ends of deciding well, living well, contemplating well, believing well, and governing well. We begin with the timeless end of deciding well."

"⁴ Sowell, Thomas, A Conflict of Visions: Ideological Origins of Political Struggles, (New York, William Morrow & Company, 1987)."

"⁵ Lakoff, George, *Moral Politics: What Conservatives Know and Liberals Don't*, (Chicago, University of Chicago Press, 1997)."

Chapter 1, Two Views of Deciding Well, first paragraph

Changed "our ends" to "ends" in the first sentence.

Changed "their ends" to "the ends that they address" in the second sentence.

Changed "living well" to "the process of living well" in the fifth sentence.

Chapter 1, Two Views of Deciding Well, second paragraph

Changed "To decide" to "From the temporal view of modern economics, to decide" in the last sentence.

Chapter 1, Two Views of Deciding Well, third paragraph

Changed "both excellence in solving temporal problems and excellence in finding temporal problems" to "excellence in both solving temporal problems and in finding temporal problems to solve" in the first sentence.

Changed "Good managers" to "Decision scientists" in the second sentence.

Changed "To decide" to "From the timeless view of decision science, to decide" in the last sentence.

Merged the third paragraph into the second paragraph

Chapter 1, Two Views of Deciding Well, new third paragraph

Changed "solving the problem at hand" to "solving the temporal problem we chose to solve" in the first sentence.

Changed "solving our timeless problem" to "addressing the timeless problem we chose to address" in the second sentence.

Changed "Deciding well" to "In complex adaptive system terms, deciding well" in the last sentence.

Deleted the footnote: "⁵ To decide well is also a matter of performing these formal steps well, which includes balancing the cost and benefits of each step. Few decision *events* deserve all of these formal steps."

Merged the last four sentences into the new fourth paragraph.

Deleted the footnote: "⁶ Here again, to decide well is also a matter of performing these formal steps well, which includes balancing the cost and benefits of each step. Few decision *cycles* deserve all of these formal steps."

Chapter 1, Two Views of Deciding Well, new fourth paragraph

Changed "Deciding well" to "In complex adaptive system terms, deciding well" in the last sentence.

Chapter 1, Two Views of Deciding Well, last paragraph

Changed "When we" to "From the timeless view of deciding well, when we" in the first sentence.

Changed "problems" to "temporal problems to solve" in the fourth sentence.

Changed "the things" to "the resources" and "problems" to "temporal problems" in the fifth sentence.

Deleted the last sentence: "In planning terms, these resources are strategic assets."

Chapter 1, The EOQ/RTS Example, third paragraph

"The EOQ model contains the hidden assumption that we do not learn through experience. This assumption tends to be self-fulfilling. Managers who do not expect learning do not instruct their workers to learn how to set up ever more efficiently. Until the Toyota practice of *rapid tool setting* (RTS) became popular, it was common for standard procedures for setting up machine tools to remain unchanged for years, even decades. In contrast, managers practicing RTS instruct their workers to learn how to set up ever more efficiently. They also look for ways to promote such learning."

was changed to:

"The temporal concept of deciding well inherent in the EOQ model does not allow for learning through experience. This deficiency tends to blind managers using the EOQ model to the possibility of learning. Managers who do not expect their workers to learn do not manage their workers in ways that encourages their workers to learn. Until the Toyota practice of *rapid tool setting* (RTS) became popular, it was common for standard procedures for setting up machine tools to remain unchanged for years, even decades. In contrast, managers practicing RTS promote learning how to set up ever more efficiently through such means as training team members to learn, encouraging team members to share ideas about learning, and rewarding team members for learning."

Chapter 1, The Need for Timeless Views, last paragraph, last two sentences

"Like most residents of Flatland, these residents of our modern age fail to grasp a larger truth. To grasp this truth, they need a timeless view of deciding well."

was changed to:

"Lacking the concepts they need to "see" through "efficiency frontiers," these residents of the modern age fail to grasp a larger truth. To grasp this truth, they need to embrace a timeless view of deciding well."

Chapter 1, end

Added the following:

"Temporal versus Timeless Values

The Toyota production system shows us how we can use the timeless concept of deciding well to help us find better temporal problems to solve. We can also use this concept to help us find better timeless problems to solve. If this seems paradoxical, it is because we are so used to looking at the world from a temporal view. From a temporal view, the bounded process of deciding well cannot help us find what it is that we ought to seek; we must look elsewhere for this knowledge. In contrast, from a timeless view, the unbounded process of deciding well can help us find what we ought to seek by providing us with a coherent way of thinking about the whole. This timeless way of thinking about the whole is the key to a holistic way of viewing our search for useful knowledge. To understand this, we need to need to distinguish between the temporal and timeless ideals that we use to decide well under constraints. We commonly call these ideals *values*.

"In discussing temporal and timeless values, we can avoid much tedium and confusion by capitalizing timeless values. Using this convention, (1) to pursue the timeless end of living well is to pursue the Good; (2) to pursue the timeless end of believing well is to pursue the Truth; (3) to pursue the timeless end of deciding well is to pursue Wisdom; and (4) to pursue the timeless end of living and working with others well is to pursue Justice. To many modern readers, this convention will have theistic overtones. Properly conceived, it has religious overtones that may or may not be theistic. As we shall see in the balance of this work, in the endless pursuit of deciding well, it is useful to distinguish between 'theism' ("belief in the existence of the divine"); 'religion' ("the pursuit of linking or re-linking with something infinitely greater than ourselves"); and 'faith' ("certainty beyond reason"). We can easily imagine using each of these three concepts in conflict with the other two. We can imagine theists without religious zeal, without faith in the existence of the divine, or with faith in the chance to win a trip to Las Vegas. We also can imagine atheists with faith in the non-existence of the divine, or atheists pursuing justice with religious zeal. We ought to distinguish between theism, religion, and faith.

"From the temporal view, we base our values on what we currently know. The temporal concept of deciding well does not include learning. Hence, we cannot learn more about temporal values by deciding well. We must look beyond deciding well to find sources for our values. These outside sources include such things as theistic texts, political ideologies, and moral philosophies.

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"From the timeless view, we base our values on what we may learn from the endless process of deciding well. The timeless concept of deciding well includes learning ever more about deciding well. Deciding well and our understanding of deciding well coevolve. Hence, we can learn about timeless values by deciding well. Although outside sources of knowledge may be helpful, we do not need to rely on them to help us learn about timeless values.

"Learning ever more about timeless values calls for us to question the process by which we reduce experience into general beliefs about experience. In philosophical terms, we *induce* general beliefs about the world from instances of experience. Consider the claims that we might make about the color of marbles in an urn by examining marbles randomly drawn from the urn. If the first fifty marbles we randomly draw from the urn are white, we can reasonably believe that there is a high probability that all of the marbles in the urn are white. If the first five hundred marbles that we pull from the urn are white, we can reasonably believe that there is a very high probability that all of the marbles in the urn are white. However, we cannot reasonably induce the belief that all marbles in the urn are white until we examine every marble in the urn. This awkward fact raises doubts about the validity of such general beliefs as all crows are black, all ice cubes are cold, and the laws of physics are true. Philosophers call the question of whether the process of inducing general beliefs from experience is valid reasoning *the problem of induction*.

"Nineteenth-century philosopher John Stuart Mill provides us with a famous realworld example of this problem. Prior to the European discovery and exploration of Australia, Europeans believed that all swans were white. The European discovery of a new Australian bird species led Europeans to change this belief to the belief that all swans are either white or black. Mill intended his "black swan" example to show us how unexpected events may change our beliefs. The complete history of the discovery of this new species also shows us how an unexpected event may change the concepts underlying our beliefs. Rather than including the new bird in "swan" genus (*atratus*), the Europeans originally created a new genus (*chenopis*). Under this genus, the new birds were as distant from swans as cheetahs are from domestic cats. Hence, the Europeans did not need to change their belief that all swans are white. It was only after the Europeans reclassified the new birds into the swan genus that they needed to change their belief about the color of swans. *The problem with inductive reasoning concerns not only our beliefs but also the concepts underlying our beliefs.*¹⁰

"From the temporal view of believing well, this broader view of the problem with inductive reasoning raises sociological questions about how we collectively choose to reduce our experiences to concepts. These questions include who chooses, why they choose as they do, and why the rest of us accept what they choose.

"From the timeless view of believing well, this broader view of the problem with inductive reasoning raises the question of what system of concepts best helps us to believe well. Addressing this question calls for us to consider the ultimate end of believing well. Is it a means of pursuing the Good? Is it a means of pursuing the Truth,

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which is to say an end in itself? Is it a means of pursuing Justice? Is it all of these things? Is it all of these things and more?

"From the modern liberal view, there is no right or wrong answer to these questions. This is because there is no disputing what end or ends we should value most highly within the bounds set by the political problem of maintaining the freedom to choose what matters most to each of us, which we do by maintaining a good society, a society in which the least well-off members have what they need to live decent lives."

"From the timeless view of deciding well, the modern liberal belief system is temporal. Like other temporal belief systems, it tends to blind us to the best problems to solve. A kind assessment is that it is a *rational* response to the schism between Plato and Aristotle that is at the core of Western thought. Plato would have us know the Truth by breaking free from the everyday concepts that cause us to see only the shadows of things, fighting our way out of the cave of ignorance, and stepping into the light of the Good. Once we are used to the light of the Good, we will be able to see the ideal forms - the unchanging elements and relations - that underlie all sensations of reality. In other words, Plato would have us break the stream of words that binds our minds to our personal mental worlds in order to embrace a stream of words that binds our minds to a universal mental world. This is not a rational process; it is a religious one. It is the mystical process of linking or re-linking to something infinitely greater than ourselves.¹² In sharp contrast, Aristotle split the study of nature and motion, which he called physics, from the study of first causes and principles, which he variously called wisdom, first philosophy, or theology. In modern terms, he split science from metaphysics. His approach is *rational*, not *wise*.¹³

"The wise response to this schism between religion and science at the core of Western thought is to pursue the timeless end of knowing the unchanging elements and relations that underlie all sensations of reality. We pursue this timeless end by pursuing the timeless end of deciding well. The first step in setting this course is to create the concepts of bounded and boundless factors of the endless process of deciding well. A bounded factor is any factor for solving temporal problems that we can have in excess. One such factor is material resources. An example of excess material resources is maintaining thirty punch card presses when three can more than meet expected demand. We do not need to maintain such a high level of production capacity. Another bounded factor is freedom. An example of excess freedom is the freedom to cripple or kill our competitors. We do not need the freedom to choose what is so clearly unjust. In contrast, a boundless factor is any factor of solving temporal problems that we cannot have in excess. The Good, the Truth, and Wisdom are boundless factors. We need the Good to avoid deprivation, which hinders us from deciding well. We need the Truth to avoid ignorance, which also hinders us from deciding well. Wisdom is knowledge of how to decide well. We can never have too much knowledge of how to decide well.

"The next step is to recognize that the endless process of deciding well is the same for all timeless ends that are boundless factors of the endless process of deciding well.

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Hence, the endless pursuits of all of the boundless factors of deciding well intertwine to form a single endless pursuit. Consider the relation between the pursuit of the Good and the pursuit of the Truth. We pursue the Good by deciding well, which calls for us to pursue the Truth. We pursue the Truth by deciding well, which calls for us to pursue the Good. Thus the pursuit of the Good and the pursuit of the Truth intertwine to form a single pursuit.

"The last step is to recognize that Justice is a boundless factor of deciding well. We need the help of others to pursue the boundless factors of deciding well. We can never live and work too well with others. The inexhaustibility of knowledge makes it as easy, if not easier, to cooperate across time as to cooperate across space. The ancient Chinese provide us a simple model for cooperating across time, "The debts that we owe to our ancestors we pay to our descendents." Following this model, we can cooperate in deciding well across time and space with the moral rule, "The debts we cannot pay to those due we pay to others by deciding well." This includes the debts that we owe to those who provided us with the knowledge that we use freely.

"To perfect cooperation in believing well, the knowledge we create must be useful to all intelligent life. To be so, its substance must concern the unchanging elements and relations that underlie all sensations and its form must be the universal language of mathematics. *The gold standard for useful knowledge is the mathematical representation of the unchanging elements and relations that underlie all sensations.*

"In summary, the temporal and timeless concepts of value differ markedly. From the temporal view of deciding well, sources outside of the process of deciding well provide us with values. From the timeless view of deciding well, values emerge from the endless pursuit of deciding well. Deciding well and our understanding of deciding well co-evolve."

"Overview

In this section, we saw how the timeless concept of deciding well can help us pursue the timeless end of deciding well (Wisdom). In the remaining three sections, we will see how this timeless concept can help us pursue the timeless ends of living well (the Good), believing well (the Truth), and governing well (Justice).

"The section on living well begins with brief discussion of how we ought to use both temporal and timeless tools to pursue the Good. The remainder of the section defines timeless alternatives to the modern economic concepts of wealth, consumption, trade, taxation, production, and profit. These six timeless concepts help us develop a timeless view of living well, which we can use to help us find better problems to solve.

"The section on believing well begins with a discussion of pursuing the ring of Truth. Next is a discussion of the concept of timeless science as the endless process of refining everyday thinking. The section ends with a discussion of the concept of timeless decision science as the endless process of refining our beliefs about deciding well.

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"The section on governing well explains how we may test the system of core beliefs that supports timeless science. The hypothesis of this timeless political experiment is the belief that the sovereign rights story of timeless science, which calls for us to pursue the timeless end of living well every more justly, ever more wisely, ever more truly, and ever more coherently, will help us pursue the timeless end of living well better than any other sovereign rights story."

"¹⁰ Allowing for experience to change our system of concepts blurs the distinction between truths grounded in reason (means independent of fact) and truths grounded in fact. Philosophers will recognize this as the analytic versus synthetic truth problem, which is the first of W. V. O. Quine's two dogmas of empiricism. See Quine, W. V. O, "Two Dogmas of Empiricism," *The Philosophical Review* Vol. 60, No. 1 (Jan., 1951) pp. 20-43. Reprinted in Quine, W. V. O., *From a Logical Point of View*, (Harvard University Press, 1953; second, revised edition 1961)."

"¹¹ The primary source of this essential description of modern liberalism is John Dewey, who reduced German idealism and American pragmatism to a democratic socialist stew."

"¹² Again, this concept of linking or re-linking is agnostic. It includes an atheistic pursuit of the Truth. It also includes Albert Einstein's dream of understanding God's thoughts and the Vedanta school of Indian thought's goal of the individual soul (*Atma*) merging with the universal soul (*Brahman*)."

"¹³ In Kuhnsian terms, Aristotle's approach is normal science, not revolutionary science. See Kuhn, Thomas, *The Structure of Scientific Revolutions*, (Chicago: University of Chicago Press, 1962), chapter X."

Chapter 2, Tools for Living Well, first paragraph

"In the first section, we saw how the timeless concept of deciding well can help us decide well. In this section, we will see how the timeless concept of deciding well can help us live well."

was deleted.

Chapter 2, the second through last section heading titles

Added "Timeless" to the titles, e.g., "Wealth" becomes "Timeless Wealth."

Chapter 2, Timeless Consumption, first paragraph, first six sentences

"Consuming is the process of using wealth to achieve our ends. From the temporal view of modern economics, this end is the temporal end of satisfying our wants. Our actions reveal our preferences. Hence, winning a fortune in the lottery is always good

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for us. From the timeless view of deciding well, this end is the timeless end of living well. We make mistakes."

were changed to:

"Consuming is the process of using wealth to live well. From the temporal view of modern economics, our actions reveal our preferences. Hence, winning a fortune in the lottery is always good for us. From the timeless view of deciding well, we make mistakes."

Chapter 2, Pleasure and Pain, first paragraph

Changed "are" to "can be seen as" in the first sentence.

Chapter 2, Pleasure and Pain, second paragraph, first sentence

"There are two sorts of pleasure."

was changed to:

"Two sorts of pleasure concern us here."

Chapter 2, Pleasure and Pain, second paragraph, footnote

Added the sentence:

"We see this reflected in the once popular surfer concept of "total involvement" and in psychologist Mihály Csíkszentmihályi's concept of "flow.""

Chapter 2, Pleasure and Pain, fifth paragraph, last sentence

"Finding pleasure in swimming calls for an investment in the ability to swim well."

was changed to:

"Finding complete pleasure (ecstasy) in running calls for an investment in the ability to run well."

Chapter 2, Pleasure and Pain, last paragraph

"We commonly use the term 'pleasure' to mean pleasure-in-acting and the term 'joy' to mean pleasure-in-being. Using these common terms, losing ourselves in a good activity yields pleasure and joy, and losing ourselves in a bad activity yields only pleasure."

was deleted.

Chapter 2, Virtuous Circles, first paragraph, first sentence

"Pleasure is not only an end in itself but also a means to joy."

was changed to:

"We commonly use the term 'pleasure' to mean pleasure-in-acting and the term 'joy' to mean pleasure-in-being. Using these common terms, pleasure is not only an end in itself but also a means to joy."

Chapter 2, Wisdom, last paragraph

"There are three basic ways of deciding: deliberation, decision rules, and discipline. In its most complete form, deliberation consists of (1) finding a problem to solve; (2) formulating alternatives; (3) evaluating alternatives; (4) choosing an alternative; (5) carrying out the chosen alternative; and (6) learning from the experience. This formal process is thorough but costly. Decision rules (rules of thumb/heuristic methods) are less thorough but also less costly. Discipline (consciously formed habits) is the least thorough, least costly, and least susceptible to deprivation. Deciding well is often a matter of knowing which of these three ways to use."

was deleted.

Chapter 2, Two Means of Living Well and Alternatives to Living Well, both sections

"Two Means of Living Well

Aristotle and Spinoza provide us with different means of living well. Aristotle asks us to look for moral virtue in others. He believed that moral virtue is the habit of wanting the right things, which we develop by acting as if we want the right things. In contrast, Spinoza asks us to look into ourselves. He believed that moral virtue is the ability to address the causes of our emotions rationally, which we develop by learning to understand our needs and the best means of satisfying them.

"Spinoza's means of living well fits a contemplative life better than an active one. It is easier to identify our needs in a monastery than it is in a trading pit. It is not surprising that aspiring Einsteins prefer Spinoza's ethics and aspiring Alexanders prefer Aristotle's.

"For most of us, the important question is not whether a contemplative life is better or worse than an active one, but when to abandon introspection for discipline. How do we know when our emotions and appetites interfere with our reason, intuition, and perception? One solution is a list of warning signals, Dante's seven deadly sins: lust, gluttony, greed, sloth, wrath, envy, and pride."

were changed to:

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"Tools for Pursuing the Virtuous Circle

Aristotle and Spinoza provide us with different means of living well. Aristotle asks us to look for moral virtue in others. He believed that moral virtue is the habit of wanting the right things, which we develop by acting as if we want the right things. In contrast, Spinoza asks us to look into ourselves. He believed that moral virtue is the ability to address the causes of our emotions rationally, which we develop by learning to understand our needs and the best means of satisfying them.

"Spinoza's means of living well fits a contemplative life better than an active one. It is easier to identify our needs in a monastery than it is in a trading pit. It is not surprising that aspiring Einsteins prefer Spinoza's ethics and aspiring Alexanders prefer Aristotle's. However, we ought never to forget that Alexander and Einstein were extraordinary people who lived extraordinary lives. It is impossible for us to know how much of their success was due to their temperament, talents, and simply being in the right place at the right time.

"A great danger of choosing to live the active life of Alexander is falling into the habit of preferring pleasure to joy. Similarly, a great danger in choosing the contemplative life of Spinoza is falling into the habit of preferring joy to pleasure. The Taoist tradition provides us with concepts to help us understand these two problems. From the Taoist view, living well is a matter of balancing *yin* and *yang*. In this context, *yin* is the desire for joy/pleasure-in-being; *yang* is the desire for pleasure/pleasure-in-acting. When we have too much *yang*, we pursue pleasure too much. When we have too much *yin*, we pursue joy too much. When *yin* and *yang* are in balance, we pursue the virtuous circle of pleasure and joy.

"Another danger is failing to consider the choices we make. The Hindu tradition provides us with concepts to help us understand this problem. The Sãmkhya doctrine of the three gunas recognizes that all living things are mixtures of *sattva* (lucidity), *rajas* (passion), and *tamas* (dark inertia). When lucidity prevails, we pursue pleasure and joy; when passion prevails, we pursue pleasure; and when dark inertia prevails, we pursue nothing. People who pursue nothing, who blindly follow their leaders or culture, are the most likely to fall into the vicious cycle of poverty.

"These tools help us choose the right path, the path of the endless pursuit of pleasure and joy. We also need tools to help us stay on this path. For example, we need tools to help us know when our emotions and appetites interfere with our reason, intuition, and perception, which is when we ought to abandon introspection for discipline. One solution to this problem is a list of warning signals, Dante's seven deadly sins: lust, gluttony, greed, sloth, wrath, envy, and pride."

Chapter 2, Alternatives to Living Well, entire section

"Alternatives to Living Well

Some people pursue pleasure alone rather than the virtuous circle of pleasure and joy. When choosing to act, they consider only that an activity yields pleasure, not that it

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satisfies an unmet need. This makes them vulnerable to falling into the habit of masking the pain of an unmet need with the pleasure of an activity that fails to satisfy that unmet need. Other people pursue nothing. They seldom consider whether the activities they choose are good or bad. This makes them the most likely to fall into the cycle of poverty.

"The wisdom of pursuing pleasure and joy has no bounds. In the Hindu tradition, the Sāmkhya doctrine of the three gunas recognizes that all living things are mixtures of *sattva* (lucidity), *rajas* (passion), and *tamas* (dark inertia). When lucidity prevails, we pursue pleasure and joy; when passion prevails, we pursue pleasure; and when dark inertia prevails, we pursue nothing. In the Taoist tradition, living well is a matter of balancing *yin* and *yang*. In this context, *yin* is the desire for joy/pleasure-in-being; *yang* is the desire for pleasure/pleasure-in-acting. When we have too much *yang*, we pursue pleasure too much. When we have too much *yin*, we pursue joy too much. When *yin* and *yang* are in balance, we pursue the virtuous circle of pleasure and joy."

were deleted.

Chapter 2, Timeless Trade, first paragraph footnote

Changed "Hollywood and the Silicon Valley" to "The trading clusters we call Hollywood and the Silicon Valley" in the last sentence.

Chapter 3, The Curious End of Believing Well, title

Changed title to "Pursuing the Ring of Truth."

Chapter 3, Pursuing the Ring of Truth, all paragraphs

"In the first two sections, we saw how the timeless concept of deciding well can help us decide well and live well. In this section, we will see how this concept can help us believe well.

"Eighteenth-century philosopher David Hume explains why believing well ought to be a timeless end. We can never be certain that the way in which we generalize our experiences is true until we experience all that can be experienced. For example, we cannot be certain that all of the marbles in an urn are white until we have examined all of the marbles in the urn. Until we examine the last marble, there is always the chance that the next marble we examine will not be white. Philosophers call this the problem of induction.

"Nineteenth-century philosopher John Stuart Mill provides us with a famous realworld example of the problem of induction. Prior to the European discovery and exploration of Australia, Europeans believed that all swans were white. The European discovery of a new Australian bird species led Europeans to change this belief to the belief that all swans are either white or black.

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"Mill intended his "black swan" example to show how unexpected events may overturn our beliefs. The complete history of the discovery of this new species also shows us how such an event may change the concepts underlying our beliefs. The Europeans originally classified the new species of bird in a new genus, *chenopis*, rather than the "swan" genus, *atratus*. Under the genus *chenopis*, the new birds were as distant from swans as cheetahs are from domestic cats. Hence, the Europeans did not need to change their belief that all swans are white. It was only after the Europeans reclassified the new birds into the genus *atratus* that they needed to change their belief about the color of swans. The problem of induction concerns not only our beliefs but also the concepts underlying our beliefs.¹

"From the temporal view of believing well, this expanded view of the problem of induction raises sociological questions about how we collectively choose to reduce our sensations to concepts. These questions include who chooses, why they choose as they do, and why the rest of us accept what they choose. Answering these questions usually involves claims to values.

"The great danger with thinking in terms of values is confusing the temporal with the timeless. If we are not careful, we can confuse values based on what we currently know with values based on all that can be known. We can avoid this confusion by capitalizing timeless values. Using this convention, (1) to pursue the timeless end of living well is to pursue the Good; (2) to pursue the timeless end of believing well is to pursue the Truth; and (3) to pursue the timeless end of living and working with others well is to pursue Justice.²

"From the timeless view of believing well, this expanded view of the problem of induction calls for us to ask what system of concepts best helps us to believe well. Answering this question calls for us to consider the ultimate end of believing well. Is it a means of pursuing the Good? Is it a means of pursuing the Truth, which is to say an end in itself? Is it a means of pursuing Justice? Is it all of these things? Is it all of these things and more?

"From the modern liberal view, there is no right or wrong answer to this question. This is because there is no disputing what end or ends we should value most highly. There is only the problem of maintaining the freedom to choose what matters most to us, which we do by maintaining a good society, a society in which the least well-off members have what they need to live decent lives.³

"The modern liberal belief system is temporal. Like other temporal belief systems, it tends to blind us to the best problems to solve. A kind assessment is that it is a *rational* response to the schism between Plato and Aristotle that is at the core of Western thought. Plato would have us know the Truth by breaking free from the everyday concepts that cause us to see only the shadows of things, fighting our way out of the cave of ignorance, and stepping into the light of the Good. Once we are used to the light of the Good, we will be able to see the ideal forms — the unchanging elements and relations — that underlie all sensations of reality. In other words, Plato

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would have us break the stream of words that binds our minds to our personal mental worlds in order to embrace a stream of words that binds our minds to a universal mental world. This is not a rational process; it is a religious one. It is the mystical process of linking or re-linking to something infinitely greater than ourselves.⁴ In sharp contrast, Aristotle split the study of nature and motion, which he called physics, from the study of first causes and principles, which he variously called wisdom, first philosophy, or theology. In modern terms, he split science from metaphysics. He also provided us with a tool kit for refining our beliefs, which we call Aristotelian logic. His approach is *rational*, not *wise*.⁵

"The wise response to this schism at the core of Western thought is to pursue the timeless end of knowing the unchanging elements and relations that underlie all sensations of reality. We pursue this timeless end by deciding well. The first step in setting this course is to create the concepts of bounded and boundless factors of deciding well. A bounded factor is any factor for solving temporal problems that we can have in excess. One such factor is material resources. An example of excess material resources is maintaining thirty punch card presses when three can more than meet expected demand. We do not need to maintain such a high level of production capacity. Another bounded factor is freedom. An example of excess freedom is the freedom to cripple or kill our competitors. We do not need the freedom to choose what is so clearly unjust. In contrast, a boundless factor is any factor of solving temporal problems that we cannot have in excess. The Good, the Truth, and Wisdom are boundless factors. We need the Good to avoid deprivation, which hinders us from deciding well. We need the Truth to avoid ignorance, which also hinders us from deciding well. Wisdom is knowledge of how to decide well. We can never have too much knowledge of how to decide well.

"The next step is to recognize that the endless process of deciding well is the same for all timeless ends that are boundless factors of deciding well. Hence, the endless pursuits of all of the boundless factors of deciding well intertwine to form a single endless pursuit. Consider the relation between the pursuit of the Good and the pursuit of the Truth. We pursue the Good by deciding well, which calls for us to pursue the Truth. We pursue the Truth by deciding well, which calls for us to pursue the Good. Thus the pursuit of the Good and the pursuit of the Truth intertwine to form a single pursuit.

"The last step is to recognize that Justice is a boundless factor of deciding well. We need the help of others to pursue the boundless factors of deciding well. We can never live and work too well with others. The inexhaustibility of knowledge makes it as easy, if not easier, to cooperate across time as to cooperate across space. The ancient Chinese provide us a simple model for cooperating across time, "The debts that we owe to our ancestors we pay to our descendents." Following this model, we can cooperate in deciding well across time and space with the moral rule, "The debts we cannot pay to those due we pay to others by deciding well." This includes the debts that we owe to those who provided us with the knowledge that we use freely.

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"The scope of deciding well is boundless. To perfect cooperation in deciding well, we need to express our knowledge in a form that is useful to all intelligent life. The gold standard of useful knowledge is the mathematical representation of the unchanging elements and relations that underlie all sensations."

"¹ Allowing for experience to change our system of concepts blurs the distinction between truths grounded in reason (means independent of fact) and truths grounded in fact. Philosophers will recognize this as the analytic versus synthetic truth problem, which is the first of W. V. O. Quine's two dogmas of empiricism. See Quine, W. V. O, "Two Dogmas of Empiricism," *The Philosophical Review* Vol. 60, No. 1 (Jan.,1951) pp. 20-43. Reprinted in Quine, W. V. O., *From a Logical Point of View*, (Harvard University Press, 1953; second, revised edition 1961)."

"² To many modern readers, this convention will have theistic overtones. Properly conceived, it has religious overtones that may or may not be theistic. In our natural pursuit of living well it is useful to distinguish between theism (belief in the existence of the divine); religion (the pursuit of linking or re-linking with something infinitely greater than ourselves); and faith (certainty beyond reason). We can easily imagine using each of these three concepts in conflict with the other two. We can imagine theists without religious zeal, without faith in the existence of the divine, or with faith in the chance to win a trip to Las Vegas. We also can imagine atheists with faith in the non-existence of the divine or atheists pursuing justice with religious zeal. We ought to distinguish between theism, religion, and faith."

"³ The primary source of this essential description of modern liberalism is John Dewey, who reduced German idealism and American pragmatism to a democratic socialist stew."

"⁴ Again, this concept of linking or re-linking is agnostic. It includes an atheistic pursuit of the Truth. It also includes Albert Einstein's dream of understanding God's thoughts and the Vedanta school of Indian thought's goal of the individual soul (*Atma*) merging with the universal soul (*Brahman*)."

"⁵ In Kuhnsian terms, Aristotle's approach is normal science, not revolutionary science. See Kuhn, Thomas, *The Structure of Scientific Revolutions*, (Chicago: University of Chicago Press, 1962), chapter X."

were deleted.

Chapter 3, The Ring of Truth, heading

Deleted the heading.

Chapter 3, Pursuing the Ring of Truth, new first paragraph

Changed "The" to "From the timeless view of deciding well, the" in the first sentence.

Chapter 3, The Elephant in the Room, first paragraph

Changed "There is another "ring of Truth" story here. It concerns" to "Perhaps the grandest "ring of Truth" story concerns" in the first two sentences.

Chapter 3, The Elephant in the Room, last two paragraphs

Inserted the heading, "Revering Life Well" to in front of the last two paragraphs.

Chapter 3, Revering Life Well, first paragraph

Changed "Again," to "Again, from the timeless view of deciding well," in the first sentence.

Chapter 3, Refining Stories, first paragraph, first three sentences

"As living beings, it is in our nature to live well. As intelligent beings, we live well by deciding well. Defining what we ought to seek as something other than those things that we need to decide well leads us to act foolishly."

were changed to:

"From the timeless view of deciding well, defining what we ought to seek as something other than those things that we need to decide well leads us to act foolishly."

Chapter 3, Leaning Through Experience, all subsections

Converted all subsections to bullet point or blocked paragraphs. The bullet points are the former sub-subsection headings, *Trading Failures*, *Recursive Failures*, and *Computer Models*.

Chapter 3, A Crude Look at the Whole, third paragraph

Changed "helps us to predict" to "helps us predict" in the first sentence.

Changed "they retard revering life well" to "they result in more stress than there otherwise would be. People immediately experience some of this stress as turbulence in the flow of resources. The remainder is frozen in our networks of knowledge-in-use as embedded mistakes. Though largely hidden from current view, these embedded mistakes both increase the potential for catastrophe and retard progress toward the timeless end of revering life well" in the last sentence.

Chapter 3, A Crude Look at the Whole, last paragraph

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"In 1776, Adam Smith's example of a pin factory showed the wisdom of pursuing the virtuous circle of the division of labor and the expansion of market size.²⁶ Today, Toyota's strategy for learning shows the wisdom of pursuing the virtuous circle of good people and good products. Good people produce good products. Good products, *including good intellectual tools*, produce good people. Given this new logic, we ought to learn more about good people and good products. To do so well, we need a timeless science of deciding well.²⁷"

was moved to the end of the second section and changed to:

"Conclusion

In 1776, Adam Smith's example of a pin factory showed the wisdom of pursuing the virtuous circle of the division of labor and the expansion of market size.⁷ Today, Toyota's strategy for learning shows the wisdom of pursuing the virtuous circle of good people and good products. Good people produce good products. Good products, *including good intellectual tools*, produce good people. Given this new logic, we ought to learn more about good people and good products. To do so well, we need a timeless science of deciding well.⁸ The next section outlines this science."

Chapter 3, Conclusion, second paragraph

Changed "concept of science as the research program of, by, and for intelligent life" to "concept of science" in the first sentence.

Chapter 3, Conclusion, last paragraph

"Timeless science calls for testing all beliefs against experience, including the core beliefs that support timeless science. The next section explains how we may test the system of core beliefs that supports timeless science."

was deleted.

Chapter 4, Sovereignty, first paragraph

"In the first three sections, we saw how the timeless concept of deciding well can help us decide well, live well, and believe well. In this section, we will see how this concept can help us govern well."

was deleted.

Chapter 4, Sovereignty, new first paragraph, first sentence

"From the timeless view of deciding well, governing well is a matter of managing rights and responsibilities well."

was changed to:

"From the temporal view of governing well, governing well is a matter of administering justice well. In contrast, from the timeless view of governing well, governing well is a matter of managing rights and responsibilities well."

Chapter 4, A Sovereign Story of Timeless Science, first paragraph

Changed "civil faith" to "civil faith, what set of publicly professed and practiced beliefs," in the last sentence.

Chapter 4, A Sovereign Story of Timeless Science, last paragraph

Changed "this sovereign rights story" to "the sovereign rights story above" in the first sentence.

Changed "this story" to "the story above" in the third sentence.

Chapter 4, Good Policies, first paragraph

Changed "freedom to decide" to "presence or absence of the freedom to decide" in the second sentence.

Chapter 4, Judge Interventions, first paragraph, first two sentences

"Government policymakers decide who makes what decisions under what incentives. Wise policymakers consider the costs and benefits of learning."

was changed to:

"In setting policies that concern who makes what decisions under what incentives, wise policy makers consider the costs and benefits of learning."

Chapter 4, Judge Interventions, second paragraph

Changed "erring on the side of not passing a just law" to "erring on the side of not passing a just law, which is to say erring on the side of liberty" in the second sentence.

Chapter 4, Tax Well, both paragraphs

"The power to tax is not only the power to raise funds but also the power to change decisions. From a temporal view, the power to tax is the power to destroy. Taxing owners of houses based on the number of windows will reduce the number of windows in houses. Similarly, taxing medical researchers by the number of animals they use in their experiments will reduce the number of animals used in medical experiments.

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"From a timeless view, the power to tax is the power to induce the creation and use of particular knowledge. Taxing the number of windows in houses will induce the creation and use of knowledge of how to live with fewer windows. Similarly, taxing the number of animals used in medical experiments will induce the creation and use of knowledge of how to experiment using fewer animals. Taxing, like restricting speech or actions, affects how we create and use knowledge. The embedded mistakes from taxing foolishly are just as real, and just as dangerous, as those from restricting speech or actions foolishly."

was split into two parts. The first part went into a new subsection in the **Living Well** section:

"Timeless Taxation

The power to tax is not only the power to raise funds but also the power to change decisions. From a temporal view, the power to tax is the power to destroy. Taxing owners of houses based on the number of windows will reduce the number of windows in houses. Similarly, taxing medical researchers by the number of animals they use in their experiments will reduce the number of animals used in medical experiments.

"From a timeless view, the power to tax is the power to induce the creation and use of particular knowledge. Taxing the number of windows in houses will induce the creation and use of knowledge of how to live with fewer windows. Similarly, taxing the number of animals used in medical experiments will induce the creation and use of knowledge of how to experiment using fewer animals."

and the last part was changed to:

"Taxing, like restricting speech or actions, affects how we create and use knowledge. The economic turbulence and embedded mistakes from taxing foolishly are just as real, and just as dangerous, as those from restricting speech or actions foolishly. Hence, policymakers ought to think as carefully about how they tax as they do about how they restrict speech or actions."

Chapter 4, Control the Money Supply Passively, second paragraph

Changed "a blessing" to "beneficial" in the first sentence.

Appendix A, Less is More, end

Added the following paragraph:

"There is another "less is more" story here. It is that ever leaner production leads to ever more complexity in our networks of knowledge-in-use. Just as the motions of a loom weave yarn into cloth, folding and smoothing parts of the line weave knowledge

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into networks of knowledge-in-use. Regrettably, we do not yet have the concepts we need to think clearly about the structure of these networks."

Appendix B, Schweitzer's Universal Spiritual Need, first paragraph

Changed "something infinitely greater than ourselves" to "the infinite Being" in the first sentence.

Appendix B, Schweitzer's Universal Spiritual Need, second paragraph

Changed "Magical mysticism" to "From Schweitzer's view, magical mysticism" in the first sentence.

Appendix B, Worldly Benefits of Magical Mysticism, title

Inserted the following subsection:

"Temporal and Timeless Mysticism

To many people, Schweitzer's terms 'mystical oneness,' 'ethical mysticism,' and 'magical mysticism' call to mind the most dangerous aspects of theistic religion. From the view of timeless science, the problem lies not in how Schweitzer defines these terms, but rather with his failure to distinguish between the personal and civil concepts of these terms. From the view of timeless science, we are as individual researchers pursuing a personal vision of mystical oneness within a research organization dedicated to pursuing a civil vision of mystical oneness. Personal concepts are those concepts that we use to guide our personal experiments in living well. Civil concepts are those that we use to ensure that our personal experiments in living fall within the bounds of timeless science. We base our personal concepts on our personal faith, which may be theistic, atheistic, or agnostic. We base our civil concepts on our civil faith, the publicly professed and practiced beliefs that support the collective pursuit of the Good, the Truth, Justice, Wisdom, and Beauty.

"Schweitzer bases his three mystical concepts on the term 'infinite Being.' To most people, the term 'infinite Being' has theistic overtones. To avoid these overtones in the civil concepts of 'mystical oneness,' 'ethical mysticism,' and 'magical mysticism,' we need a less theistic term to express the concept of what we seek when we seek the intertwined timeless ends of the Good, the Truth, Justice, Wisdom, and Beauty. This work uses the vague phrase "something infinitely larger that ourselves" to express this concept."

Changed "Magical Mysticism" to "Detachment" in the title sentence.

Appendix B, Worldly Benefits of Detachment, first paragraph

Changed "embraced the worldly benefit of ethical mysticism" to "recognized the worldly benefit of embracing the world and life" in the first sentence.

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Changed "magical mysticism" to "denying the world and life by means of detaching ourselves from the world and life" in the second sentence.

Appendix B, Worldly Benefits of Detachment, second paragraph

Changed "Magical mysticism" to "Detaching ourselves from the world and life" in the first sentence.

Appendix B, Worldly Benefits of Detachment, third paragraph

"We can combine the best of magical and ethical mysticism by setting our objectives according to ethical mysticism and then acting according to magical mysticism. Imagine a medical doctor at an airliner crash site performing triage. In choosing to be at the crash site doing triage, she has embraced the world and life. To do her best at this terrible task, she must detach herself from her work and the results of her work. In religious terms, she must act as if she is in this world but not of it. This practical combination of magical and ethical mysticism is more useful than ethical mysticism alone."

was changed to:

"We can combine the best of embracing and denying the world and life by setting our objectives according to the former and then acting according to the latter. Imagine a medical doctor at an airliner crash site performing triage. In choosing to be at the crash site doing triage, she has embraced the world. To do her best at this terrible task, she must detach herself from her work and the results of her work. In religious terms, she must act as if she is in this world but not of it."

Appendix B, Worldly Benefits of Detachment, last paragraph

"Magical mysticism also can change our belief systems for the better. The classic example is Archimedes' discovery of the principle of displacement. Such epiphanies raise many questions about the interplay of concepts and consciousness. We laugh when a child asks, "Why do freedom fighters fight against freedom?" We also laugh when a stooge throws away a priceless vase because he confused being priceless with being worthless. Jokes that play on inconsistencies in our system of concepts raise our energy and clarity. Raised energy and clarity can trigger changes in our system of concepts, which can further raise energy and clarity, which can trigger further changes in our system of concepts, and so on. A small event can trigger an avalanche of change that seems to transport us to a new world. This magical process involves breaking the stream of words that connects our consciousness to our belief systems. Mystics of many religions have learned that breaking this stream of words by embracing magical mysticism can help us to change our belief systems for the better. It can help us to conceive what was inconceivable.

was changed to:

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"Further, denying the world and life as we know it can change our belief systems for the better. The classic example is Isaac Newton's epiphany about the force that caused things such as apples to fall to the ground being the same force that kept the planets in orbit around the sun and the moon in orbit around the earth. Such epiphanies raise many questions about the interplay of consciousness and our system of beliefs, including the concepts underlying our beliefs. We laugh when a child asks, "Why do freedom fighters fight against freedom?" We also laugh when a stooge throws away a priceless vase because he confused being priceless with being worthless. Jokes that play on inconsistencies in our system of beliefs raise our energy and clarity. Raised energy and clarity can trigger changes in our system of beliefs, which can further raise energy and clarity, which can trigger further changes in our system of beliefs, and so on. A small event can trigger an avalanche of change that seems to transport us to a new world. This magical process involves breaking the stream of words that connects our consciousness to our belief systems. Breaking this stream of words can help us change our belief systems for the better; it can help us to conceive what was inconceivable.

Appendix B, Balanced Excellence, first paragraph

"Many dualistic religions claim that we need mystical oneness with the infinite Being during life to reach the ultimate end of mystical oneness with the infinite Being after life. In short, a life lived well must include mystical oneness."

was changed to:

"Many dualistic religions claim that we need to experience mystical oneness with the infinite Being during life in order to reach the ultimate end of eternal mystical oneness with the infinite Being after life. From this view, a life lived well must include the temporal experience of mystical oneness."

Appendix B, Balanced Excellence, last paragraph

"Some means to mystical oneness sacrifice safety or health in order to conserve scarce resources. Religions that revere life include beliefs to check these extreme means. One example is the Hindu belief that we have as many lifetimes as it takes to reach mystical union. Another is the Catholic belief that we can reach mystical union during an existence after death known as purgatory. Religions that help us revere life well balance emotional and reasonable means to mystical oneness.⁸⁷

was changed to:

"Some means to experiencing mystical oneness in life sacrifice safety or health in order to conserve scarce resources. Religions that help us revere life include beliefs to check these extreme means. One example is the Hindu belief that we have as many lifetimes as it takes to experience mystical union in life. Another is the Catholic belief that we can attain eternal mystical union during an existence after death known as

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purgatory. Religions that help us revere life well balance emotional and reasonable means to experiencing mystical oneness in life.⁸"

Appendix B, *Heroic Death*, first paragraph, last sentence

"The heroic death combines the magical and ethical means of satisfying our need for mystical oneness in a single, final act."

was changed to:

"Such a death combines the magical and ethical means of satisfying our need to experience mystical oneness in life in a single, final act."

Appendix B, *Heroic Death*, last paragraph

Changed "Those" to "From the view of timeless science, those" in the first sentence.

Changed "fools or knaves" to "fools locked into false temporal views of the world or knaves using others to help them satisfy their foolish personal ends" in the last sentence.

Appendix B, Einstein's Twin Warnings, second paragraph

Changed "This belief" to "This belief in divine revelation" in the second sentence.

Changed "Creator" to "divine being" in the first and third sentences (2 occurrences).

Appendix B, Einstein's Twin Warnings, last paragraph

Changed "Creator" to "Father" in the first and second sentences (2 occurrences).

Appendix B, Deciding Beautifully, end

Added the following paragraph:

"In pursuing the timeless end of revering life well, we need to distinguish between our personal faith and our civil faith. We are as scientists in a large research institution. We may encourage others to follow our personal research programs in living well. However, should never try to force others to follow them. To do so is to confuse our personal faith with our civil faith."

Changes in Version 2008.10.10

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Michael claimed the conclusions of the fourth chapter (section in essay terms) and two appendices were weak. The October 30 changes included one paragraph additions to the conclusions of the two appendices. The conclusion to the fourth paragraph was simply the conclusion to the fourth paragraph. There was no conclusion to the work as a whole. These changes aim to correct this deficiency. The Boundless Pragmatism subsection concludes the fourth chapter. The Summary and Conclusion subsection concludes the work as a whole.

Chapter 4, Promote Free Trade, first paragraph

Changed "Nothing" to "In the long run, nothing" in the last sentence.

Chapter 4, Conclusion

"Conclusion

From the timeless view of deciding well, we owe it to ourselves to embrace our role as researchers in the research program of, by, and for intelligent life. We ought to ensure that our experiments in governance are properly run, which is to say that our rights, laws, and actions conform to our beliefs about deciding well. We also ought to encourage rival experiments in deciding well. To do otherwise is to deny our proper role in the flourishing of life."

was changed to:

"Boundless Liberalism

From timeless view of governing well, we can test the core beliefs of timeless science by testing the sovereign story of timeless science. The sovereign story of timeless science calls for us to form governments that ensure both the responsibility and the right to decide well. Given the key role liberty plays in deciding well, we may call this timeless approach to governing well *boundless liberalism*. Boundless liberalism is the civil faith of timeless science.

"Boundless liberalism differs markedly from modern liberalism. From the timeless view of deciding well, modern liberalism puts policymakers in the role of parents and the rest of us in the role of children. This conflicts with idea that we are all researchers and research subjects in the research program of, by, and for intelligent life.

"Boundless liberalism also differs markedly from the classical liberalism that arises from using modern economic models as tools for helping us find problems to solve. Modern economic models tend to blind us to the debts that we owe those who created the knowledge that we use freely. From the timeless view of deciding well, we pay these debts to others by deciding well. Deciding well calls for us to help others decide well. In the long run, nothing is more useful to a person than a person who decides well.

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"Unlike boundless liberalism, modern and classical liberalism use the temporal concepts. As we saw in the EOQ/RTS example, the temporal concept of excellence in means tends to blind us to learning. Worse, the temporal concept of deciding well tends to blind us to the problem of embedding mistakes into our networks of knowledge-in-use. This leads to economic debacles, the sudden and catastrophic release of "frozen accidents" under stress.

"From the timeless view of believing well, these reasons alone are not enough to accept boundless liberalism as our civil faith. We ought to accept boundless liberalism if and only if it rings truer than all other civil faiths. Further, we ought to continue to accept it only as long as it continues to ring truer than all other civil faiths. To do otherwise would be to contradict one of the major principles of the intelligent life sciences, which is to test the tools we use to help us find problems to solve by how well they help us find problems to solve.

"Summary and Conclusion

The essence of modernism is breaking the whole into parts in order to do something better. The major disadvantage of this is forgetting to consider the whole, especially how we fit into the whole. Despite the fact that this knowledge, like definite knowledge of the transcendental number *pi*, will remain forever beyond our grasp, we must not pass over it in silence. When we expand the scope of the problems we face to the limits of imagination, a structure of timeless values emerges. Understanding the process by which we progress towards these timeless ends, which we may call the endless process of deciding well, can provide us with tools for helping us move towards these ends. We may use these tools to help us find better problems to solve; to help us cooperate with others of different personal faiths; and to help us know when we are acting as wolves, or as sheep, rather than as intelligent beings seeking the Good, the Truth, Justice, Wisdom, and Beauty."

Changes in Version 2008.10.11

Title

Added the subtitle, "A Timeless View of Our Search for Knowledge."

Acknowledgments, seventh paragraph

Changed "my use of jargon" to "my use of such terms as "recursionist economics" and "paradigm shift."" in the fifth sentence.

Acknowledgments, last paragraph

Changed "standard warning applies: the ideas" to "ideas" in the last sentence.

Preface, ninth paragraph

Deleted the phrase "which includes the timeless structure that emerges when we enlarge the problems we face to the limits of imagination" from the third sentence.

Chapter 1, A Holistic View of Deciding Well, third paragraph

"Another way of thinking about how we cope with these constraints is to think deeply about how our mental models of the world mislead us. We normally study these failures on the level of our beliefs about the world. We can also study the failures of our mental models on the level of the concepts that underlie our beliefs."

was deleted.

Chapter 1, A Holistic View of Deciding Well, new third paragraph

Changed "Yet another" to "Another" in the first sentence.

Deleted the third through fifth sentences: "Both groups of liberals believe that we ought to have the freedom to choose what we want, provided that what we want does not constrain the right of others to choose what they want. However, the two groups differ in beliefs about what constraints our choices impose on others. To the classical liberal, these constraints include only those we might directly impose on others by force. To the modern liberal, these constraints include all constraints that keep our fellow citizens from deciding well enough to live decent lives."

Chapter 1, A Holistic View of Deciding Well, new third paragraph

Changed "holistic approach to deciding well" to "holistic approach to choosing frames" in the second to last sentence.

Chapter 1, A Holistic View of Deciding Well, last paragraph

Deleted the phrase "which we do by seeking to live ever more wisely, ever more coherently, ever more truly, and ever more justly" from the fourth last sentence.

Chapter 1, Temporal and Timeless Values, tenth paragraph

Changed "approach" to "approach to science" in the last sentence.

Changed "revolutionary science" to "a combination of normal science and revolutionary science" in the first sentence of the last footnote.

Chapter 1, Temporal and Timeless Values, last paragraph

Changed "values" to "temporal values" in the second sentence.

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Changed "values" to "timeless values" in the third sentence.

Chapter 1, Overview, first paragraph

Changed "timeless concept" to "timeless decision-making concept" in the last sentence.

Chapter 1, Overview, second paragraph

Changed "the pursuit of the Good" to "in our endless pursuit of living well" in the second sentence.

Changed "remainder" to "rest" in the second sentence.

"These six timeless concepts help us develop a timeless view of living well, which we can use to help us find better problems to solve."

was deleted.

Chapter 1, Overview, third paragraph

Changed "pursuing the ring of Truth" to "contemplating well" in the first sentence.

Chapter 1, Overview, last sentence

"The hypothesis of this timeless political experiment is the belief that the sovereign rights story of timeless science, which calls for us to pursue the timeless end of living well every more justly, ever more wisely, ever more truly, and ever more coherently, will help us pursue the timeless end of living well better than any other sovereign rights story."

was changed to:

"We may call this system of core beliefs the civil faith of timeless science. The hypothesis of this timeless experiment is the belief that this civil faith can help us govern ourselves better than any other civil faith. The section ends with a brief discussion of how this civil faith differs from modern and classical liberalism."

Chapter 2, Timeless Profit, first paragraph

Changed "period of action" to "a period of action" in the second sentence.

Changed "series of decisions" to "a series of decisions" in the third sentence.

Chapter 3, Pursuing the Ring of Truth, title

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Changed "Pursuing the Ring of Truth" to "Contemplating Well."

Chapter 4, Boundless Liberalism, first paragraph, third and fourth sentences

"The responsibility to decide well calls for our civil faith to conform to timeless science, and for our personal faith to fall within the bounds of our civil faith. The right to decide well includes the rights to all those things that we need to decide well."

were deleted.

Changes in Version 2008.10.13

Preface, fifth paragraph, last sentence

"We can never be certain that all crows are black (the induction problem) or that all bachelors are unmarried (the analytic versus synthetic truth problem)."

was changed to:

"Among other things, we can never be certain that the concepts that we use to express our beliefs can express definite knowledge of what causes our sensations of reality."

Chapter 1, A Holistic View of Deciding Well, fourth paragraph

Changed "without limit" to "forever" in the third sentence.

Chapter 1, A Holistic View of Deciding Well, last paragraph

Deleted the phrase "which we do by seeking to live ever more wisely, ever more coherently, ever more truly, and ever more justly" from the fourth last sentence.

Chapter 1, The Need for Timeless Views, last paragraph

Changed ""see" through" to ""see through"" in the second to last sentence.

Chapter 1, Temporal and Timeless Values, second paragraph

Changed "We ought" to "As we shall see, we ought" in the last sentence.

Chapter 1, Temporal and Timeless Values, fourth paragraph, last sentence

"Although outside sources may be helpful, we do not need to rely on them to help us learn about timeless values."

was changed to:

"There are no sources of knowledge beyond the scope of the endless process of deciding well."

Chapter 1, Temporal and Timeless Values, second to last paragraph

"To perfect cooperation in believing well, the knowledge we create must be useful to all intelligent life. To be so, its form must be the universal language of mathematics, and its substance must concern the unchanging elements and relations that underlie all sensations. *The gold standard for useful knowledge is the mathematical representation of the unchanging elements and relations that underlie all sensations.*"

was reduced to a footnote of the previous section.

Chapter 1, Overview, third paragraph

Changed "the concept of timeless science" to "the timeless concept of science" in the second sentence.

Changed "the concept of timeless decision science" to "the timeless concept of decision science" in the last sentence.

Chapter 2, Timeless Profit, first paragraph

Changed "value of acting" to "value of acting well" in the first sentence.

Chapter 3, The Elephant in the Room, last paragraph

Changed "what set of assumptions that we choose" to "what core set of currently untestable beliefs, what personal faith, we choose" in the last sentence.

Chapter 3, Revering Life Well, last paragraph

Changed "intelligent life" to "intelligent beings" in the last sentence.

Chapter 3, A Crude Look at the Whole, last paragraph

Changed "increase the potential for catastrophe and retard progress toward the timeless end of revering life well" to "retard progress toward the timeless end of revering life well and increase the potential for major catastrophes" in the last sentence.

Chapter 4, A Sovereign Story of Timeless Science, second paragraph

Changed "timeless science" to "the timeless concept of science" in the first sentence.

Chapter 4, Manage the Money Supply Passively, last paragraph

Changed "tearing the fabric of civilization" to "destroying the interwoven networks of knowledge that bind us together, the fabric of civilization" in the second sentence.

Chapter 4, Boundless Liberalism, first paragraph

Changed "sovereign story of timeless science" to "civil faith of science" in the first sentence.

Chapter 4, A Sovereign Story of Timeless Science, second paragraph

Changed "timeless science" to "the timeless concept of science" in the first and second sentences.

Deleted the last sentence: "Boundless liberalism is the civil faith of timeless science."

Appendix B, Deciding Beautifully, last paragraph, end

Added the sentence: "More likely than not, such confusion will slow progress towards the timeless end of revering life well."

Changes in Version 2008.10.14

Chapter 1, Temporal versus Timeless Views, first paragraph

"The Toyota production system shows us how we can use the timeless concept of deciding well to help us find better temporal problems to solve. We can also use this concept to help us find better timeless problems to solve. If this seems paradoxical, it is because we are so used to looking at the world from a temporal view. From a temporal view, the bounded process of deciding well cannot help us find what it is that we ought to seek; we must look elsewhere for this knowledge. In contrast, from a timeless view, the unbounded process of deciding well can help us find what we ought to seek by providing us with a coherent way of thinking about the whole. This timeless way of thinking about the whole is the key to a holistic way of viewing our search for useful knowledge. To understand this, we need to need to distinguish between the temporal and timeless ideals that we use to decide well under constraints. We commonly call these ideals *values*."

was changed to:

"The Toyota production system shows us how we can use the timeless concept of deciding well to help us find better temporal problems to solve. We can also use this concept to help us find better timeless problems to solve. To people with a temporal

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view, this will likely seem paradoxical. From a temporal view, the temporally bounded process of deciding well cannot help us find what it is that we ought to seek; hence we must look elsewhere for this knowledge. In contrast, from a timeless view, the temporally unbounded process of deciding well can help us find what we ought to seek by providing us with a coherent way of thinking about the whole. To understand this, we need to need to distinguish between the temporal and timeless ideals that we use to decide well under constraints. We commonly call these ideals *values*."

Chapter 1, Temporal versus Timeless Values, fifth paragraph

Changed "process by which we reduce experience into general beliefs about experience" to "way we frame the world, which includes our general beliefs about the world" in the first sentence.

Changed "fifty marbles" to "twenty marbles" in the fourth sentence.

Changed "five hundred marbles" to "two hundred marbles" in the fifth sentence.

Changed "His approach to science" to "This approach to learning" in the last sentence.

Chapter 4, The Explicit Experiment, last paragraph

Changed "the people of the United States" to "the people of the United States who think deeply about governing well" in the first sentence.

Chapter 4, Boundless Liberalism, first paragraph

Changed "The civil faith in timeless science" to "This civil faith" in the second sentence.

Changes in Version 2008.10.15

Chapter 1, A Holistic Approach to Deciding Well, third paragraph

Changed "modern liberal view" to "modern liberal metaphor" in the last sentence.

Chapter 1, A Holistic Approach to Deciding Well, last paragraph

Changed "timeless ends" to "timeless concepts" in the second to last sentence.

Changed "timeless end" to "timeless concept" in the last sentence.

Chapter 1, Two Views of Deciding Well, first paragraph

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Changed "ends (goals)" to "our ends" in the first sentence.

Chapter 1, Two Views of Deciding Well, fourth paragraph

Changed "complex adaptive system" to "biological" in the last sentence.

Chapter 1, Temporal versus Timeless Values, second paragraph

Changed "As we shall see in the balance of this work, in the endless pursuit" to "In the endless pursuit" in the fifth sentence.

Chapter 1, Temporal and Timeless Values, fourth paragraph

"From the timeless view, we base our values on what we may learn from the endless process of deciding well. The timeless concept of deciding well includes learning ever more about deciding well. Deciding well and our understanding of deciding well coevolve. Hence, we can learn about timeless values by deciding well. There are no sources of knowledge beyond the scope of the endless process of deciding well."

was changed to:

"From the timeless view, we learn ever more about timeless values by deciding well. Deciding well and our understanding of deciding well co-evolve. In timeless terms, seeking the Truth about timeless values calls for us to seek the Truth about Wisdom. As we shall see, seeking the Truth about Wisdom in turn calls for us to seek the Truth about seeking the Truth."

Chapter 1, Temporal versus Timeless Values, fifth paragraph, first two sentences

"Learning ever more timeless values calls for us to question the way we frame the world, which includes our general beliefs about the world. In philosophical terms, we *induce* general beliefs about the world from instances of experience."

was changed to:

"Eighteenth century philosopher David Hume provides us with a reason to believe that seeking the Truth is an endless process. This reason concerns the way we *induce* general beliefs about the world from instances of experience."

Chapter 1, Temporal versus Timeless Values, seventh paragraph, first sentence

"From the temporal view of believing well, this broader view of the problem of induction raises sociological questions about how we collectively choose to reduce our experiences to concepts."

was changed to:

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"From the temporal view of believing well, the problem of choosing concepts raises sociological questions about how we collectively choose concepts."

Chapter 1, Temporal versus Timeless Values, eighth paragraph, first sentence

"From the timeless view of believing well, this broader view of the problem of induction raises the question of what system of concepts best helps us to believe well."

was changed to:

"From the timeless view of believing well, the problem of choosing concepts raises the question of what system of concepts best helps us believe well."

Chapter 1, Temporal versus Timeless Values, tenth paragraph, first three sentences

"From the timeless view of deciding well, the modern liberal belief system is temporal. Like other temporal belief systems, it tends to blind us to the best problems to solve. A kind assessment is that it is a *rational* response to the schism between Plato and Aristotle that is at the core of Western thought."

were merged into the previous paragraph and changed to:

"From the timeless view of deciding well, this modern answer is temporal, not timeless.

"The debate over whether it is better to take a temporal or timeless approach to believing well has divided Western philosophy since the time of Plato and Aristotle."

Chapter 1, Temporal versus Timeless Values, tenth paragraph, last sentence

"This approach to learning is *rational*, not *wise*."

was changed to:

"This approach to believing well is temporal, not timeless."

Changed "Aristotle's" to "this" and "a combination of normal science" to "endless cycles of normal" in the first sentence of the footnote.

Chapter 1, Temporal versus Timeless Values, eleventh paragraph

Changed "*wise* response to this schism between religion and science at the core of Western thought" to "timeless approach to believing well" in the first sentence.

Chapter 3, Refining Everyday Thinking, last paragraph, footnote

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Changed "timeless" to "boundless" in the fourth and fifth sentences.

Chapter 3, Refining Stories, fourth paragraph, second footnote

Changed "true" to "the case" in the second to last sentence.

Chapter 3, Conclusion, second paragraph

Changed "mindlessness, which some call *scientism*," to "foolishness" in the last sentence.

Chapter 3, Computer Models, second paragraph

Changed "asymmetrical information market failures" to "speculative bubbles" in the first sentence.

Chapter 4, Boundless Liberalism, second paragraph

Changed "idea" to "core belief of timeless science" in the last sentence.

Chapter 4, Boundless Liberalism, fourth paragraph, first two sentences

"Unlike boundless liberalism, modern and classical liberalism use the temporal concepts. As we saw in the EOQ/RTS example, the temporal concept of excellence in means tends to blind us to learning."

were changed to:

"Further, both modern and classical liberalism use the temporal concepts of excellence in means and of deciding well. The temporal concept of excellence in means tends to blind us to learning."

Chapter 4, Boundless Liberalism, last paragraph, first two sentences

"From the timeless view of believing well, these reasons alone are not enough to accept boundless liberalism as our civil faith. We ought to accept boundless liberalism if and only if it rings truer than all other civil faiths."

were changed to:

"From the timeless view of believing well, we ought to accept boundless liberalism if and only if it rings truer than all other civil faiths."

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Changes in Version 2008.10.18

Preface, ninth paragraph

Changed "pursuits" to "endless pursuits" in the fourth sentence.

Chapter 1, Two Views of Deciding Well, fourth paragraph, last sentence

"In biological terms, deciding well and our understanding of deciding well co-evolve."

was changed to:

"The endless process of deciding well and our understanding of this process coevolve."

Chapter 1, Temporal versus Timeless Values, fourth paragraph

"Deciding well and our understanding of deciding well co-evolve."

was changed to:

"The endless process of deciding well and our understanding of this process coevolve."

Deleted "in turn" from the last sentence.

Chapter 1, Temporal versus Timeless Values, twelfth paragraph, first two sentences

"The next step is to recognize that the endless process of deciding well is the same for all timeless ends that are boundless factors of the endless process of deciding well. Hence, the endless pursuits of all of the boundless factors of deciding well intertwine to form a single endless pursuit."

was changed to:

"The next step is to recognize that the endless process of deciding well. Hence, the endless pursuits of all of the boundless factors of deciding well intertwine to form a single endless pursuit."

Chapter 1, Temporal versus Timeless Values, last paragraph

"In summary, the temporal and timeless concepts of value differ markedly. From the temporal view of deciding well, sources outside of the process of deciding well provide us with temporal values. From the timeless view of deciding well, timeless values emerge from the endless pursuit of deciding well. Deciding well and our understanding of deciding well co-evolve."

was changed to:

"In summary, we use values to help us judge deciding well. From the temporal view of deciding well, we base our values on what we currently know. From the timeless view of deciding well, we base our values on what we plan to learn about all that can be known. We learn ever more about values by pursuing the timeless end of deciding well. The endless process of deciding well and our understanding of this process co-evolve."

Chapter 2, Tools for Pursuing Wisdom, last paragraph, last two sentences

"For example, we need tools to help us know when our emotions and appetites interfere with our reason, intuition, and perception, which is when we ought to abandon introspection for discipline. One solution to this problem is a list of warning signals, Dante's seven deadly sins: lust, gluttony, greed, sloth, wrath, envy, and pride."

were changed to:

"For example, we need tools to help us know when our emotions and appetites interfere with our reason, intuition, and perception in order to know when we ought to abandon introspection for discipline. One solution to this problem is a list of warning signals: lust, gluttony, greed, sloth, wrath, envy, and pride (Dante's seven deadly sins)."

Chapter 3, *The Elephant in the Room*, second and third paragraphs, last sentence (2 occurrences)

"Deciding well and our understanding of deciding well co-evolve."

was changed to:

"The endless process of deciding well and our understanding of this process coevolve."

Chapter 4, Boundless Liberalism, fourth paragraph

Changed "This leads" to "Embedding mistakes into our networks of knowledge-in-use both slows progress and leads" in the last sentence.

Chapter 4, Boundless Liberalism, last paragraph

"From the timeless view of believing well, we ought to accept boundless liberalism if and only if it rings truer than all other civil faiths. Further, we ought to continue to accept it only as long as it continues to ring truer than all other civil faiths. To do otherwise would be to contradict one of the major principles of the intelligent life

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sciences, which is to test the tools we use to help us find problems to solve by how well they help us find problems to solve."

was deleted.

Appendix B, Personal versus Civil Mysticism, entire subsection

"To many people, Schweitzer's terms 'mystical oneness,' 'ethical mysticism,' and 'magical mysticism' call to mind the most dangerous aspects of theistic religion. From the view of timeless science, the problem lies not in how Schweitzer defines these terms, but rather with his failure to distinguish between the personal and civil concepts of these terms. From the view of timeless science, we are as individual researchers pursuing a personal vision of mystical oneness within a research organization dedicated to pursuing a civil vision of mystical oneness. Personal concepts are those concepts that we use to guide our personal experiments in living well. Civil concepts are those that we use to ensure that our personal experiments in living fall within the bounds of timeless science. We base our personal concepts on our personal faith, which may be theistic, atheistic, or agnostic. We base our civil concepts on our civil faith, the publicly professed and practiced beliefs that support the collective pursuit of the Good, the Truth, Justice, Wisdom, and Beauty.

"Schweitzer bases his three mystical concepts on the term 'infinite Being.' To most people, the term 'infinite Being' has theistic overtones. To avoid these overtones in the civil concepts of 'mystical oneness,' 'ethical mysticism,' and 'magical mysticism,' we need a less theistic term to express the concept of what we seek when we seek the intertwined timeless ends of the Good, the Truth, Justice, Wisdom, and Beauty. This work uses the phrase "something infinitely larger that ourselves.""

was changed to:

"Although Schweitzer's mystical concepts may ring true for theists, others will find them too theistic. From the view of timeless science, the problem lies not in how Schweitzer defines his concepts, but rather in his failure to distinguish between personal and civil definitions of his mystical terms. Personal concepts are concepts that we use to guide our personal experiments in living well. Civil concepts are concepts that we use to ensure that our personal experiments in living well fall within the bounds of timeless science. We base our personal concepts on our personal faith, which may be theistic, atheistic, or agnostic. We base our civil concepts on our civil faith, the publicly professed and practiced beliefs that support the collective pursuit of the Good, the Truth, Justice, Wisdom, and Beauty. Schweitzer uses the phrase 'infinite Being' to define his mystical concepts. Timeless science calls for a phrase that has less theistic overtones. This work uses the phrase 'something infinitely greater than ourselves.""

Appendix B, Deciding Beautifully, last paragraph

Changed "them" to "our programs" in the fourth sentence.

Changes in Version 2008.10.20

Acknowledgments, seventh paragraph

Changed "Yankee" to "New England" in the second sentence.

Changed "big picture" to "big picture," in the fourth sentence.

Chapter 1, Setting Words Aright, last paragraph

Changed "make the best use of what we know" to "decide well" in the last sentence.

Chapter 1, A Holistic Approach to Deciding Well, last paragraph, last two sentences

"Understanding this holistic approach to deciding well calls for understanding the timeless concepts of deciding well, living well, contemplating well, believing well, and governing well. We begin with the timeless concept of deciding well."

were changed to:

"We are as researchers (and research subjects) in the research program of, by, and for intelligent life.

"Understanding this holistic approach to deciding well calls for understanding the timeless concepts of deciding well, living well, contemplating well, believing well, and governing well. We begin with the timeless concept of deciding well."

Chapter 1, The EOQ/RTS Example, fifth paragraph

Changed "(temporal) efficient" to "efficient" in the first sentence.

Chapter 1, Temporal versus Timeless Values, twelfth paragraph, end

Added the sentence: "By similar reasoning, all endless pursuits of boundless factors intertwine into a single endless pursuit, which we may call the endless pursuit of deciding well."

Chapter 1, Temporal versus Timeless Values, last paragraph, third and fourth sentences

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"From the timeless view of deciding well, we base our values on what we plan to learn about all that can be known. We learn ever more about values by pursuing the timeless end of deciding well."

were changed to:

"From the timeless view of deciding well, we learn ever more about values by pursuing the timeless end of deciding well (Wisdom)."

Chapter 3, Conclusion, second paragraph

Changed "Deciding well" to "The endless process of deciding well" in the first sentence.

Chapter 3, Conclusion, last paragraph

Changed ", including" to ". This includes" in the first sentence.

Changed "the system of core beliefs that supports timeless science" to "this system of core beliefs" in the last sentence.

Chapter 4, Promote Decision Science, first paragraph

Changed "ever more" to "(ever more)" in the last sentence.

Chapter 4, Summary and Conclusion, first paragraph

Changed ", which we may call the endless process of deciding well, can provide us with tools for helping us move" to "can provide us with tools for helping us progress" in the last sentence.

Changed "seeking the Good, the Truth, Justice, Wisdom, and Beauty" to "pursuing happiness ever more justly, ever more wisely, ever more truly, and ever more coherently" in the last sentence.

Appendix B, Personal versus Civil Mysticism, entire subsection

Moved subsection to the end of the section, that is, after the *Worldly Benefits of Detachment* subsection.

Appendix B, Deciding Beautifully

Changed "Beautifully" to "Reverently" in the title.

Changed "However, should" to "However, we should" in the fourth sentence.

Changes in Version 2008.10.22

Acknowledgments, seventh paragraph

Changed double quotation marks to single quotation marks around the two terms in the fifth sentence.

Chapter 1, Temporal versus Timeless Values, first paragraph, third through fifth sentences

"To people with a temporal view, this will likely seem paradoxical. From a temporal view, the temporally bounded process of deciding well cannot help us find what it is that we ought to seek; hence we must look elsewhere for this knowledge. In contrast, from a timeless view, the temporally unbounded process of deciding well can help us find what we ought to seek by providing us with a coherent way of thinking about the whole."

were deleted.

Chapter 1, Temporal versus Timeless Values, third paragraph, second through fourth sentences

"The temporal concept of deciding well does not include learning. Hence, we cannot learn more about temporal values by deciding well. We must look beyond deciding well to find sources for our values."

were changed to:

"The temporal concept of deciding well does not include learning; hence we must look beyond deciding well to find sources for our values."

Chapter 1, Temporal versus Timeless Values, fourth paragraph

"From the timeless view, we learn ever more about timeless values by deciding well. The endless process of deciding well and our understanding of this process co-evolve. In timeless terms, seeking the Truth about timeless values calls for us to seek the Truth about Wisdom. As we shall see, seeking the Truth about Wisdom calls for us to seek the Truth about seeking the Truth."

was merged into the previous paragraph and changed to:

"From the timeless view, we learn ever more about timeless values by pursuing the timeless end of believing well (the Truth)."

Chapter 1, Temporal versus Timeless Values, new fourth paragraph

Changed "seeking" to "pursuing" in the first sentence.

Chapter 1, Temporal versus Timeless Values, new tenth paragraph, first two sentences

"The timeless approach to believing well is to pursue the timeless end of knowing the unchanging elements and relations that underlie all sensations of reality. We pursue this timeless end by pursuing the timeless end of deciding well."

were split off from the balance of the paragraph and changed to:

"The timeless approach to believing well is to pursue the timeless end of knowing the unchanging elements and relations that underlie all sensations of reality. As we shall see, we pursue this timeless end by pursuing the timeless end of deciding well (Wisdom)."

Chapter 1, Temporal versus Timeless Values, new eleventh paragraph

"The first step in setting this course is to create the concepts of bounded and boundless factors of the endless process of deciding well. A bounded factor is any factor for solving temporal problems that we can have in excess. One such factor is material resources. An example of excess material resources is maintaining thirty punch card presses when three can more than meet expected demand. We do not need to maintain such a high level of production capacity. Another bounded factor is freedom. An example of excess freedom is the freedom to cripple or kill our competitors. We do not need the freedom to choose what is so clearly unjust. In contrast, a boundless factor is any factor of solving temporal problems that we cannot have in excess. The Good, the Truth, and Wisdom are boundless factors. We need the Good to avoid deprivation, which hinders us from deciding well. We need the Truth to avoid ignorance, which also hinders us from deciding well. Wisdom is knowledge of how to decide well."

were changed to:

"The first step in setting this course is to create the concepts of bounded and boundless factors of deciding well. A bounded factor is any factor that we can have in excess. Freedom, trust, and scarce resources are bounded factors. We can have too much of these factors. For example, we do not need the freedom to cripple or kill our business competitors, boundless trust in the integrity of stock brokers, or more shoes than Imelda Marcos. In contrast, a boundless factor is any factor that we cannot have in excess. The Good, the Truth, and Wisdom are boundless factors. We need the Good to avoid deprivation, which hinders us from deciding well. We need the Truth to avoid ignorance, which also hinders us from deciding well. Wisdom is knowledge of how to decide well. We can never have too much knowledge of how to decide well."

Changes in Version 2008.10.24

Chapter 1, Overview, third paragraph

"The section on believing well begins with a discussion of contemplating well. Next is a discussion of the timeless concept of science as the endless process of refining everyday thinking. The section ends with a discussion of the timeless concept of decision science as the endless process of refining our beliefs about deciding well."

was changed to:

"The section on believing well begins with a discussion of contemplating well. Next is a discussion of the timeless concept of science as the endless process of refining everyday thinking. The section ends with a discussion of the timeless concept of decision science as the endless process of refining our beliefs about deciding well."

Appendix B, Heroic Death, first paragraph, first sentence

Changed "and the quality of intellectual tools" to "the quality of intellectual tools, and the economic resources to do what we would like to do" in the second sentence.

Appendix B, Heroic Death, first paragraph, first sentence

"The one area in which self-destructive emotions remain free is the heroic act."

was changed to:

"One area in which self-destructive emotions remain unchecked is the heroic act."

Appendix B, Heroic Death, first paragraph, first sentence

Changed "our programs" to "these programs" in the third sentence.

Changes in Version 2008.10.25

Preface, ninth paragraph

Changed "endless pursuit" to "timeless pursuit" in the third sentence.

Chapter 1, Temporal versus Timeless Values, second paragraph

Changed "endless pursuit" to "timeless pursuit" in the fifth sentence.

Chapter 1, Temporal versus Timeless Values, twelfth paragraph

Changed "endless pursuit of deciding well" to "timeless pursuit of deciding well" in the last sentence.

Chapter 1, Overview, second paragraph

Changed "endless pursuit" to "timeless pursuit" in the first sentence.

Chapter 2, Tools for Pursuing Wisdom, last paragraph

Changed "endless pursuit" to "pursuit" in the first sentence.

Chapter 3, Contemplating Well

Inserted the following subsection:

"Neither Machines nor Molecules

In this section, we apply the timeless concept of deciding well to the endless process of believing well. Among other things, this highlights the dangers of confusing the tools we use to help us solve given problems with the tools we use to choose problems to solve. Confusing these two types of tools not only slows our progress, but also embeds mistakes into our networks of knowledge-in-use. These mistakes lead to debacles, the catastrophic release of stress "frozen" in our networks of knowledge-inuse.

"A major cause of confusing these two types of tools is modern economic science. As we saw in the EOQ example, using the temporal tools of modern economics for the timeless task of choosing problems tends to blind us to the possibility of learning. We may call the flawed system that arises from this mistake 'capitalism.' As we shall see, capitalism and socialism share the fatal conceit of having us pretend to be certain. Both would have us believe that we know more than we know. Modern economic science would have us think of people as pleasure-seeking machines (marginalist microeconomics) or as molecules (neoclassical macroeconomics). In sharp contrast, the timeless pursuit of believing well calls for us to aspire to be wise by thinking of ourselves as researchers in the timeless pursuit of deciding well. The balance of this section explains how we can do this."

Chapter 3, Contemplating Well, first paragraph

Changed "endless pursuit" to "timeless pursuit" in the first sentence.

Chapter 3, Contemplating Well, first paragraph

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Changed "endless pursuit" to "timeless pursuit" in the first sentence.

Chapter 3, Revering Life Well, first paragraph

Changed "endless pursuit" to "timeless pursuit" in the first sentence.

Chapter 4, Boundless Liberalism, last paragraph

Changed ""frozen accidents" under stress" to ""frozen" stress" in the last sentence.

Changes in Version 2008.10.28

Entire work

Changed "Timeless" to "Fractal" in the subtitle.

Chapter 1, Two Views of Deciding Well, second paragraph, last sentence

Added the following footnote:

"⁶ Note that the formal timeless process of deciding well is the same across all scales of temporal problems. What we deem to be a matter of efficiency or effectiveness changes with the size of the temporal problem we choose, or is chosen for us. Hence, forgetting to choose either a temporal problem scale or a temporal scale (time horizon) can cause great confusion. For example, a problem that a CEO may view as an efficiency problem a supervisor may view as an effectiveness problem. In planning terms, a problem that a military general may view as a tactical problem a corporal may view as a strategic problem."

Chapter 1, Two Views of Deciding Well, fourth paragraph

Changed "endless process" to "timeless process" in the last sentence.

Chapter 1, Temporal versus Timeless Values, last paragraph

Changed "endless process" to "timeless process" in the last sentence.

Chapter 1, Overview, third paragraph

Changed "endless process" to "timeless process" in the second and third (last) sentences.

Chapter 2, Tools for Living Well, first paragraph

Changed title to "Timeless Tools for Living Well."

Inserted a new first paragraph:

"In this section, we apply the timeless concept of deciding well to the endless pursuit of the Good, which is to say to the timeless process of living well."

Chapter 2, Conclusion, title

Changed title to "The Need for Timeless Science."

Chapter 3, Neither Machines nor Molecules, first paragraph, first sentence

"In this section, we apply the timeless concept of deciding well to the endless process of believing well."

was changed to:

"In this section, we apply the timeless concept of deciding well to the endless pursuit of the Truth, which is to say to the timeless process of believing well."

Chapter 3, The Elephant in the Room, second paragraph

Changed "endless process" to "timeless process" in the last sentence.

Chapter 3, The Elephant in the Room, third paragraph

Changed "endless process" to "timeless process" in the last sentence.

Chapter 3, Conclusion, second paragraph

Changed "endless process" to "timeless process" in the first sentence.

Chapter 4, title

Changed the attribution of the first quote from "Publius" to "James Madison." Simplified the title heading reference.

"Let me add, that only a virtuous people are capable of freedom. As nations become corrupt and vicious, they have more need of masters." — *Benjamin Franklin*²"

⁴² Franklin, Benjamin, *The Works of Benjamin Franklin*, edited by Jared Sparks, (Chicago: Townsend MacCoun, 1882), vol. VIII, p 297. Searchable text available in Google books (28 October 2008)."

Chapter 4, Sovereignty, first paragraph

Inserted a new first sentence:

"In this section, we apply the timeless concept of deciding well to the endless pursuit of Justice, which is to say to the timeless process of governing well."

Appendix A, Less is More, last paragraph, end

Added the sentence:

"However, we can speculate that the structure of our networks of knowledge-in-use, like the timeless process of deciding well that produced it, is fractal."

Appendix B, Einstein's Twin Warnings, first paragraph

Changed "endless process" to "timeless process" in the second sentence.

Changes in Version 2008.10.31

Preface, ninth paragraph, last sentence

"To change the way we decide is to change the way we choose to live, choose to believe, and choose to govern and be governed."

was deleted.

Preface, last paragraph

Inserted the following paragraph:

"From an academic view, this work provides a basic insight into how intelligent beings create and use knowledge. This insight is the idea that the timeless process of deciding well, which includes the timeless processes of living well, contemplating well, believing well, and governing well, is temporally self-similar. Academics may use intellectual tools arising from this insight to solve current problems. As important, they may use these tools to find beautiful problems to solve."

Chapter 4, Control the Money Supply Passively, last paragraph, second sentence

"They release embedded mistakes without destroying the interwoven networks of knowledge that bind us together, the fabric of civilization."

was changed to:

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"They release embedded mistakes without destroying the fabric of civilization, the interwoven networks of knowledge that bind us together."

Appendix A, Less in More, last paragraph, end

Added the sentence:

"Understanding these networks ought to be as important to people who study intelligent life as understanding dark energy and dark matter has become to people who study cosmology and physics."

Changes in Version 2008.11.01

Preface, second to last paragraph

Changed ", which includes the timeless processes of living well, contemplating well, believing well, and governing well, is temporally self-similar" to "is a temporally self-similar universal invariant, which plays a role in the intelligent life sciences similar to that the speed of light plays in modern physics" in the second sentence.

Chapter 1, Temporal versus Timeless Values, paragraph, end

Added the sentences:

"As such, it tends to blind us to the Good, the Truth, Justice, and Wisdom."

Chapter 3, Neither Machines nor Molecules, last paragraph, third through fifth sentences

"We may call the flawed system that arises from this mistake 'capitalism.' As we shall see, capitalism and socialism share the fatal conceit of having us pretend to be certain. Both would have us believe that we know more than we know."

was deleted.

Chapter 3, Refining Everyday Thinking, eighth paragraph

Changed "ethical sciences" to "moral sciences" in the second sentence.

Appendix A, Less is More, last paragraph, fifth sentence

"However, we can speculate that the structure of our networks of knowledge-in-use, like the timeless process of deciding well that produced it, is fractal."

was deleted.

Changes in Version 2008.11.04

Entire Work, subtitle

Changed subtitle to: "A Fractal View of Intelligent Action."

Preface, second to last paragraph

Changed "temporally self-similar" to "self-similar" in the second sentence.

Appended the sentences:

"However, academics studying intelligent action ought never to forget that in studying intelligent action from this worldview, their role is that of a coach, not a player. They ought never to confuse the first order problem of deciding well with the second order problem of thinking deeply about the problems others face in deciding well. The fractal nature of intelligent action is a first order phenomenon, not a second order one. Accordingly, I wrote this work for players, not coaches."

Chapter 1, Overview, last paragraph, second through fourth sentences

Deleted the second sentence: "We may call this system of core beliefs the civil faith of timeless science."

Changed "civil faith" to "core set of beliefs" and "any other civil faith" to "any other" in the new second sentence.

Changed "civil faith" to "core set of beliefs" in the last sentence.

Chapter 3, Refining Everyday Thinking, third paragraph, second footnote, end

Added the following sentences:

"This neat relation only holds for problems that we can represent by a single decision tree model. Better predictions help us to improve our assessments of uncertain events. Better explanations help us to improve the decision tree structure. Note that this fractal way of looking at the universal problem of deciding well conflicts with the worldview of specialists in solving similar subordinate problems within this universal problem. People who dedicate their lives to studying similar subordinate problems can easily confuse what they do in helping others solve subordinate problems with the problems they face in solving generalizations of these problems. The solution to this first order versus second order abstraction problem is both simple and straightforward. In their

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professional lives, specialists must stop thinking of themselves as players and start thinking of themselves as coaches."

Chapter 3, Refining Stories, fourth paragraph

Changed "to live well¹⁶" to "to live well.¹⁶ in defining our civil faith, which is to say the set of theories we publicly proclaim and practice." in the second sentence.

Changed "tighten these loose theories" to "refine our civil faith" in the third sentence.

Chapter 3, Refining Stories, last paragraph

Changed "weeding out stories" to "weeding out stories from the set of stories that defines our civil faith" in the first sentence.

Chapter 3, Computer Models, first paragraph, last sentence, footnote

Changed "a power law rather than a Gaussian ("bell curve") probability distribution" to "power law rather than Gaussian distributions" in the second sentence.

Added the sentence: "This is a testable hypothesis."

Changes in Version 2008.11.10

Preface, second to last paragraph

"From an academic view, this work provides a basic insight into how intelligent beings create and use knowledge. This insight is the idea that the timeless process of deciding well is a self-similar universal invariant, which plays a role in the intelligent life sciences similar to that the speed of light plays in modern physics. Academics may use intellectual tools arising from this insight to solve current problems. As important, they may use these tools to find beautiful problems to solve. However, academics studying intelligent action ought never to forget that their role in studying intelligent action from this worldview, their role is that of a coach, not a player. They ought never to confuse the first order problem of deciding well with the second order problem of thinking deeply about the problems others face in deciding well. The fractal nature of intelligent action is a first order phenomenon, not a second order one. Accordingly, I wrote this work for players, not coaches. That said, the essential academic argument underlying this work deserves more than a footnote. I present it here in prose form. I put what I have to say to coaches in footnotes."

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"From an academic view, this work provides a basic insight into how intelligent beings create and use knowledge. Acting intelligently calls for us to decide well. Deciding well is a matter of recursively applying a sequence of decision-making steps. The essential steps in this sequence are (1) choosing a temporal problem to solve, (2) solving this problem, and (3) learning from the experience. So conceived, deciding well is a *self-similar universal invariant*, which is to say it is the same regardless of the scale of the temporal problem chosen, and that it is the same for all intelligent beings regardless of their circumstances and beliefs. So conceived, deciding well is also an economic process, which is to say that it is subject to constraints. If deciding well were not subject to constraints, there would be neither the need to distinguish between deciding and deciding well, nor the need to learn from experience.

"According to this conception of deciding well, inasmuch as we decide well, we learn ever more about deciding well. Over time, we collectively (1) learn that we ought to pursue factors of deciding well only to the point that they are useful to us; (2) learn to distinguish between factors that we can have in excess, which I call *bounded factors of deciding well*, and factors that we can never have in excess, which I call *boundless factors of deciding well*; and (3) learn that the endless pursuits of all boundless factors of deciding well intertwine to form a single endless pursuit. The first two of these lessons are obvious; the third calls for an explanation:

For any boundless factor of deciding well (A) and any other boundless factor of deciding well (B), pursuing A well calls for us to decide well, which in turn calls for us to pursue B well. Further, pursuing B well calls for us to decide well, which in turn calls for us to pursue A well. Hence, the pursuit of A and the pursuit of B intertwine to form a single endless pursuit. Further, how tightly the pursuits of A and B intertwine depends on how well we decide well. Applying this logic to all boundless factors, the endless pursuit. Further, how tightly these endless pursuit. Further, how tightly these endless pursuits intertwine depends on how well we decide well.

"I call the timeless end of pursuing these intertwined pursuits well *the timeless end of deciding well*. Over time, we also collectively learn that we ought to accept this timeless end as our *civil* ultimate end, which is to say our publicly proclaimed and practiced ultimate end. Proving this belief, and the beliefs that support it, calls for making a civil leap of faith."

Chapter 1, Overview, last paragraph

Changed "system of core beliefs" to "system of beliefs" in the first sentence.

Chapter 1, A Holistic Approach to Deciding Well, fifth paragraph

Deleted "(and research subjects)" from the last sentence.

Chapter 3, A Crude Look at the Whole, last paragraph

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Changed "potential for" to "probability of" in the last sentence.

Chapter 3, Conclusion, last paragraph

Changed "core beliefs" to "set of beliefs" in the first sentence.

Changed "system of core beliefs" to "set of beliefs" in the last sentence.

Chapter 4, Boundless Liberalism, first paragraph

Changed "core beliefs of timeless science" to "set of beliefs that supports timeless science" in the first sentence.

Appendix, Less is More, last paragraph

Changed "another" to "a deeper" in the first sentence.

Appendix B, Einstein's Twin Warnings, last paragraph

Changed "revere life" to "live" in the second sentence.

Changes in Version 2008.11.12

Chapter 1, A Holistic Approach to Deciding Well, fifth paragraph

Changed "classical liberal view" to "constrained view" in the fifth sentence.

Changed "modern liberal metaphor" to "nurturing parent metaphor" in the last sentence.

Changes in Version 2008.11.13

Changes made after feedback by Patricia Vaughn:

Chapter 1, Temporal versus Timeless Values, first paragraph

Deleted duplicate "need to" in the second sentence.

Chapter 2, Virtuous Circles, first paragraph

Changed "They" to "Recreational swimmers" in the last sentence.

Chapter 2, Timeless Trade, first paragraph, last sentence

"The structure of commerce emerges from the interplay of these trading costs.⁵"

"⁵ From the temporal view of modern economics, as Ronald Coase observed in his seminal paper, "The Nature of the Firm" (*Economica*, Vol. 4, Issue 16, 386-405), commercial organizations emerge from the high cost of transactions. In contrast, from the timeless view of deciding well, commercial organizations emerge from high fixed cost, low variable cost trade relations. In industrial economies, the most prominent form of commercial organization is the business firm. In knowledge economies, business firms are less prominent. The need to adapt quickly to change creates the need to lower the fixed costs of trade. As these costs fall, business firms become less "firm." In rapidly changing sectors in which transport and communication costs remain major factors, geographical clusters become more prominent than firms. The trading clusters we call Hollywood and the Silicon Valley have become more firm than the firms they contain."

was promoted to a paragraph and changed to:

"From the temporal view of modern economics, business firms emerge from the high cost of transactions.⁵ In contrast, from the timeless view of deciding well, the structure of commerce emerges from the high fixed cost of trade relations. As these costs fall, firms become ever less firm, hence entities larger than firms become ever more prominent. These larger entities include geographical clusters, such as Hollywood and the Silicon Valley; and entire sectors, notably the financial sector."

"5 Coase, Ronald, "The Nature of the Firm," Economica, Vol. 4, Issue 16, 386-405."

Chapter 2, Timeless Production, first paragraph

Changed "RTS" to "rapid tool setting (RTS)" in the first sentence.

Chapter 3, Neither Machines nor Molecules, second paragraph

Changed "EOQ" to "economic order quantity (EOQ)" in the first sentence.

Chapter 3, Contemplating Well, fourth paragraph

Changed "these two extremes" to "what is boring and what is overwhelming" in the first sentence.

Chapter 3, The Elephant in the Room, second paragraph

Changed "to seek to become" to "to become" in the second sentence.

The third sentence:

"Crude means of deciding well emerged from this religious impulse."

was changed to:

"We satisfy this need by deciding well."

Changed "we refine" to "we collectively refine" in the fifth sentence.

Chapter 3, Refining Everyday Thinking, second to last paragraph

Changed "what as yet unknown forms of intelligent life" to "what forms of intelligent life as yet unknown" in the last sentence.

Chapter 3, Refining Everyday Thinking, last paragraph

Changed "than the modern scheme to carving nature at its joints" to "to carving nature at its joints than the modern scheme does" in the last sentence.

Chapter 4, Sovereignty, first paragraph

Changed "to exercise a right well" to "to decide a matter well" in the last sentence.

Chapter 4, Sovereignty, last paragraph

Changed "of about" to "about" in the second sentence.

Chapter 4, Good Policies, first paragraph, footnote

Changed "American Economic Review 35" to "*American Economic Review*, Vol. 35, No. 4" in the first sentence.

Chapter 4, Boundless Liberalism, second paragraph

Changed "the core belief of timeless science that we are all researchers and research subjects" to "the idea that we are all researchers" in the last sentence.

Chapter 4, Temporal Details, first paragraph, footnote

Changed "came a conference" to "came from a conference" in the first sentence.

Changes in Version 2008.11.15

Acknowledgments, fifth paragraph

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"The next two were seekers of larger truths who I met at the Santa Fe Institute. Howard Sherman, SFI's "official unofficial philosopher of science" during the 1990s, introduced me to Albert Einstein's theory of knowledge, thereby weaning me from my belief in self-evident truth. W. Brian Arthur, an economist who values his search for useful truth more than his professional reputation, suggested that I write a book "from the heart" for the *Harvard Business Review/Economist* magazine audience."

was changed to:

"After selling my interest in Star Forms in 1985, I decided to explore an idea I had about how to improve financial decision-making. Decision models can represent what we believe we know about what we know ("known knowns") and what we don't know ("known unknowns"), but not what we don't know about what we don't know ("unknown unknowns"). However, we may learn from others and from experience. My idea was to create a computer language that lowers the cost of learning by dramatically lowering the cost of communicating what we know and do not know about any financial decision-making situation. Fortunately, the programming tools I needed to build a simple to use visual editor/interactive compiler were not yet available. While waiting for these tools to become available, and stable, I had much time to ponder how we imagine what we don't know. This took me to the Santa Fe Institute, where I met two seekers of larger truths. Howard Sherman, SFI's "official unofficial philosopher of science" during the 1990s, introduced me to Albert Einstein's theory of knowledge. W. Brian Arthur, an economist who values his search for useful truth more than his professional reputation, suggested that I write a book about ethics and economics "from the heart" for the Harvard Business *Review/Economist* magazine audience. Writing this work became a higher priority than selling my computer language, which has too little of the sweet pretense of certainty for modern tastes."

Chapter 1, Overview, last paragraph

Changed "core set of beliefs" to "system of beliefs" in the last two sentences (2 occurrences).

Chapter 3, Refining Everyday Thinking, third paragraph, last footnote, fourth through last sentences

"Note that this fractal way of looking at the universal problem of deciding well conflicts with the worldview of specialists in solving similar subordinate problems within this universal problem. Helping others decide well calls for thinking about the world as it is as well as the world as it is in the process of becoming. People who dedicate their lives to studying similar subordinate problems can easily confuse what they do in helping others solve subordinate problems with the problems they face in solving generalizations of these problems. The solution to this first order versus second order abstraction problem is both simple and straightforward. In their

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professional lives, specialists must stop thinking of themselves as players and start thinking of themselves as coaches."

was changed to:

"It is a first order of abstraction phenomenon. In other words, it only holds for deciding well, not for thinking about deciding well, thinking about thinking about deciding well, and so on. It does not hold for problems that concern how others decide."

Chapter 3, Refining Everyday Thinking, last paragraph, footnote

Changed "Economists" to "Modern economists" in the second sentence.

Changed "economists" to "modern economists" in the third sentence.

Changes in Version 2008.11.20

Preface, twelfth paragraph, second sentence

Inserted the sentence:

"Deciding well and our understanding of deciding well co-evolve."

Preface, thirteenth paragraph

"I call the timeless end of pursuing these intertwined pursuits well *the timeless end of deciding well*. Over time, we also collectively learn that we ought to accept this timeless end as our *civil* ultimate end, which is to say our publicly proclaimed and practiced ultimate end. Proving this belief, and the beliefs that support it, calls for making a civil leap of faith."

was appended to the twelfth paragraph and changed to:

"Over time, we also collectively learn that we ought to accept the timeless end of pursuing these intertwined pursuits well as our *civil* ultimate end, which is to say our publicly proclaimed and practiced ultimate end. Proving this belief, and the beliefs that support it, calls for making a civil leap of faith.

"To the extent that we decide well, so conceived, there is a direction to cultural evolution. Further, to the extent that we do not decide well, so conceived, we not only create turbulence in the flows of economic resources, but also embed mistakes into our networks of knowledge-in-use. These mistakes pile up. Unrelieved, this piling up of "frozen stress" leads to major catastrophes, the sudden release of large amounts of

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stress. Hence, the choice we face is not between good times and bad times; but rather between cycles of good times and bad times, and longer cycles of good times and major catastrophes. To seek to extend good times is short-sighted.

"Scientists will likely find this work especially hard to understand. Studying what I call the *intelligent life sciences* calls for studying processes rather than states, for thinking in the first person plural rather than in the passive voice, and for thinking about goals in terms of what we need before thinking about what may be possible. In short, it calls for a radically different mindset than studying what Benjamin Franklin called the *true sciences*."

Chapter 1, Setting Words Aright, title

Changed title to "Setting Concepts Aright."

Chapter 1, Setting Concepts Aright, first paragraph

Removed italics from "Concepts" in the first sentence.

Chapter 1, A Holistic View of Deciding Well, third paragraph

Changed "we may" to "eminent scholars" and "frame" to "conceptual framework" in the second sentence.

Changed "difference in beliefs" to "distinction" in the third sentence.

Chapter 1, Two Views of Deciding Well, fourth paragraph, last sentence

"The timeless process of deciding well and our understanding of this process coevolve."

was changed to:

"We learn to decide ever better."

Chapter 1, Temporal versus Timeless Values, last paragraph, last sentence

"The timeless process of deciding well and our understanding of this process coevolve."

was changed to:

"We learn to decide ever better."

Chapter 1, Overview, third paragraph

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Changed "timeless process" to "endless process" in the second and last sentences (2 occurrences).

Chapter 3, The Elephant in the Room, second paragraph, last two sentences

"We learn by doing. The timeless process of deciding well and our understanding of this process co-evolve."

was changed to:

"We learn to decide ever better."

Chapter 3, The Elephant in the Room, third paragraph, last two sentences

"We learn by doing. The timeless process of deciding well and our understanding of this process co-evolve."

was changed to:

"We learn to decide ever better."

Chapter 4, The Explicit Experiment, last paragraph, last footnote, last sentence

Added the sentence:

"Further, we can see Franklin's continued belief in an experimental approach to government in this famous reply to the woman who asked him what the secret meetings in Philadelphia over the summer of 1787 that we now know as the Constitutional Convention produced, "A republic, if you can keep it.""

Chapter 4, Promote Decision Science, first paragraph

Deleted "(ever more)" from the last sentence.

Chapter 4, Boundless Liberalism, first paragraph

Changed "both the responsibility and the right" to "the right and the responsibility" in the second sentence.

Chapter 4, Boundless Liberalism, third paragraph

Changed "a person than a person who decides well" to "us than people who decide well" in the last sentence.

Chapter 4, Boundless Liberalism, last paragraph

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"Further, both modern and classical liberalism use the temporal concepts of excellence in means and of deciding well. The temporal concept of excellence in means tends to blind us to learning. Worse, the temporal concept of deciding well tends to blind us to the problem of embedding mistakes into our networks of knowledge-in-use. Embedding mistakes into our networks of knowledge-in-use both slows progress and leads to debacles, the sudden and catastrophic release of "frozen" stress."

was changed to:

"Both of these bounded forms of liberalism use temporal concepts to help us find problems to solve. As we saw in the EOQ/RTS example, the temporal concept of excellence in means tends to blind us to learning. Worse, the temporal concept of deciding well tends to blind us to the problem of embedding mistakes into our networks of knowledge-in-use, which both slows progress and leads to debacles, the sudden and catastrophic release of "frozen" stress. In contrast, boundless liberalism uses timeless concepts to help us find problems to solve."

Changes in Version 2008.11.24

Acknowledgments, first paragraph

Changed "a dozen" to "twelve" in the last sentence.

Acknowledgments, second to last paragraph

Changed "put my thoughts into simple, common language" to "write plainly" in the last sentence.

Acknowledgments, last paragraph

"I should also like to thank the many others who have reviewed this work over the years. The ideas expressed in this work do not necessarily reflect the beliefs of those who have helped me."

was changed to:

"The ideas expressed in this work do not necessarily reflect the beliefs of these dozen people, or the many other people who have helped me over the decades I have been thinking about deciding well."

Chapter 1, Two Views of Deciding Well, second paragraph, footnote

Changed "CEO" to "chief executive" in the second to last sentence.

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Changed "military general" to "chief executive" and "corporal" to "supervisor" in the last sentence.

Chapter 3,

Changed "put my thoughts into simple, common language" to "write plainly" in the last sentence.

Chapter 3, Refining Everyday Thinking, third paragraph, footnote

"This neat relation only holds for problems that we can represent by a single decision tree model. Better predictions help us to improve our assessments of uncertain events. Better explanations help us to improve the decision tree structure. It is a first order of abstraction phenomenon. In other words, it only holds for deciding well, not for thinking about deciding well, thinking about thinking about deciding well, and so on. It does not hold for problems that concern how others decide."

was changed to:

"This neat relation only holds for problems that we can represent by a single decision tree model. Better predictions help us improve our assessments of uncertain events. Better explanations help us improve the decision structure. Hence, it only holds for deciding well, not for thinking about deciding well, thinking about thinking about deciding well, and so on."

Appendix A, Folding In Processes, second paragraph, last sentence

"Operational complexity concerns the number of decisions production teams face. The fewer the number of flexible links, the simpler the operation is."

was changed to:

"Operational complexity concerns the number of decision alternatives production teams face. Hence, the fewer the number of flexible links and the fewer the number of decision alternatives per link, the simpler the operation is."

Appendix A, Folding In Processes, last paragraph, last two sentences

"Those near the low end of the batch size scale are more like job shops. Those near the high end of the scale are more like continuous processes."

were changed to:

"Those near the low end of the batch size scale are more like job shops, and those near the high end of the scale are more like continuous processes. Further, those near the high end of the flexibility scale are more like job shops, and those near the low end of

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the flexibility scale are more like continuous processes. As we shall see, the Toyota system is flexible like a job shop in that it has many flexible links, and inflexible like continuous production in that these links contain few decision alternatives. These alternatives concern how much WIP each link contains."

Changes in Version 2008.11.26

Acknowledgments, last paragraph

"The ideas expressed in this work do not necessarily reflect the beliefs of these dozen people, or the many other people who have helped me over the decades I have been thinking about deciding well."

was deleted.

Preface, fourteenth paragraph

Changed ""frozen stress" to "mistakes" in the fourth sentence.

Changed "To seek" to "Seeking" and "short-sighted" to "as short-sighted as seeking to prevent all forest fires" in the last sentence.

Chapter 1, Two Views of Deciding Well, second paragraph, footnote

Changed "CEO" to "chief executive" in the second to last sentence.

Changed "military general" to "chief executive" and "corporal" to "supervisor" in the last sentence.

Chapter 1, Temporal versus Timeless Values, first paragraph

Changed "ideals" to "concepts of the ideals" in the third sentence.

Chapter 1, Temporal versus Timeless Values, second paragraph

"In the timeless pursuit of deciding well, it is useful to distinguish between 'theism' ("belief in the existence of the divine"); 'religion' ("the pursuit of linking or re-linking with something infinitely greater than ourselves"); and 'faith' ("certainty beyond reason"). We can easily imagine using each of these three concepts in conflict with the other two. We can imagine theists without religious zeal, without faith in the existence of the divine, or with faith in the chance to win a trip to Las Vegas. We also can imagine atheists with faith in the non-existence of the divine, or atheists pursuing justice with religious zeal. As we shall see, we ought to distinguish between theism, religion, and faith."

was changed to:

"People who make this mistake do so because they have fallen into the habit of using the terms 'theism,' 'religion,' 'faith' as synonyms for the zealous pursuit of linking or re-linking with the divine. As we shall see, we ought to distinguish between 'theism' ("belief in the existence of the divine"); 'religion' ("the pursuit of linking or re-linking with something infinitely greater than ourselves"); and 'faith' ("certainty beyond reason"). People who have trouble understanding this ought to imagine using each of these three concepts in conflict with the other two. They ought to imagine such things as theists without religious zeal, theists without faith in the existence of the divine, theists with faith in the chance to win a trip to Las Vegas, atheists with zealous faith in the non-existence of the divine, and atheists pursuing social justice with religious zeal."

Chapter 1, Temporal versus Timeless Values, eleventh paragraph

Deleted the fourth sentence: "We can have too much of these factors."

Changed "more shoes than Imelda Marcos" to "a different luxury car for each day of the week" in the new fourth sentence.

Chapter 3, Neither Machines nor Molecules, entire section

"In this section, we apply the timeless concept of deciding well to the endless pursuit of the Truth, which is to say to the timeless process of believing well. Among other things, this highlights the dangers of confusing the tools we use to help us solve given problems with the tools we use to choose problems to solve. Confusing these two types of tools not only slows our progress, but also embeds mistakes into our networks of knowledge-in-use. These mistakes lead to debacles, the catastrophic release of stress "frozen" in our networks of knowledge-in-use.

"A major cause of confusing these two types of tools is modern economic science. As we saw in the EOQ example, using the temporal tools of modern economics for the timeless task of choosing problems tends to blind us to the possibility of learning. Modern economic science would have us think of people as pleasure-seeking machines (marginalist microeconomics) or as molecules (neoclassical macroeconomics). In sharp contrast, the timeless pursuit of believing well calls for us to aspire to be wise by thinking of ourselves as researchers in the timeless pursuit of deciding well. The balance of this section explains how we can do this."

was deleted.

Chapter 3, Contemplating Well, title

Changed title back to "Pursuing the Ring of Truth."

Chapter 4, The Explicit Experiment, last paragraph

Changed "theological" to "theistic" in the last sentence.

Changes in Version 2008.11.30

Acknowledgments, fifth paragraph

Changed "we know" to "we think we know" in the third sentence.

Preface, second to last paragraph, second sentence

"Studying what I call the *intelligent life sciences* calls for studying processes rather than states, for thinking in the first person plural rather than in the passive voice, and for thinking about goals in terms of what we need before thinking about what may be possible."

was changed to:

"Studying what I call the *intelligent life sciences* calls for studying processes rather than states; for thinking in the first person plural rather than in the passive voice; for distinguishing between the tools we use to solve problems and the tools we use to find problems to solve; and for thinking about goals in terms of what we need before thinking about what may be possible."

Chapter 1, A Holistic Approach to Deciding Well, second paragraph

Changed "deliberation" to "what we may call the three D's, deliberation" in the third sentence.

Chapter 2, Tools for Living Well, third paragraph

Changed "active life of Alexander" to "active life" in the last sentence.

Changed "contemplative life of Spinoza" to "contemplative life" in the last sentence.

Chapter 2, Timeless Trade, last paragraph, third sentence

"As these costs fall, firms become ever less firm, hence entities larger than firms become ever more prominent."

was changed to:

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"As we learn ever more about trading, these costs fall, firms become ever less firm, and commercial entities larger than firms become ever more prominent."

Chapter 2, Timeless Production, first paragraph

"As the rapid tool setting (RTS) example showed, producing well calls for learningby-doing. Production processes ought to produce both products and knowledge of how to produce better."

was changed to:

"Production is the intended result of intelligent action. From the temporal view, we *do not* intend to learn from experience, hence production does not include what we learn through experience. As we saw in the economic order quantity (EOQ) example, producing well does not call for learning-by-doing. In contrast, from the timeless view, we *do* intend to learn from experience, hence production includes what we learn from experience. As we saw in the rapid tool setting (RTS) example, producing well calls for learning-by-doing."

Chapter 2, The Need for Timeless Science, last paragraph

Changed "has to" to "must" in the second sentence.

Chapter 3, Refining Theories, first paragraph

Changed "We ought" to "The timeless concept of science outlined above calls for us" in the first sentence.

Chapter 3, Refining Theories, second paragraph

Changed "We also ought" to "The timeless concept of science outlined above also calls for us" in the first sentence.

Chapter 4, The Explicit Experiment, second paragraph, last footnote

"We can see Franklin's desire for a timeless approach to science in his February, 1780 letter to fellow amateur scientist Joseph Priestley: "The rapid progress *true* science now makes, occasions my regretting sometimes that I was born so soon. It is impossible to imagine the height to which may be carried, in a thousand years, the power of man over matter. We may perhaps learn to deprive large masses of their gravity and give them absolute levity, for the sake of easy transport. Agriculture may diminish its labor and double its produce; all diseases may be by sure means prevented or cured, not excepting even that of old age, and our lives lengthened at pleasure even beyond the antediluvian standard. O that moral science were in a fair way of improvement, that men would cease to be wolves to one another, and that human beings would at length learn what they now improperly call humanity! (Franklin,

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Benjamin, *The Works of Benjamin Franklin*, edited by Jared Sparks, [Chicago: Townsend MacCoun, 1882], vol. V p 418. Searchable text available in Google books, [2 August 2008])." Further, we can see Franklin's continued belief in an experimental approach to government in this famous reply to the woman who asked him what the secret meetings in Philadelphia over the summer of 1787 that we now know as the Constitutional Convention produced, "A republic, if you can keep it.""

was changed to:

"We can see Franklin's continued belief in an experimental approach to government in this famous reply to the woman who asked him what the secret meetings that we now call the Constitutional Convention produced, "A republic, if you can keep it.""

Chapter 4, The Explicit Experiment, last paragraph, footnote

Changed "the Great Depression" to "what we now call the Great Depression" in the sixth sentence.

Deleted the last two sentences: "If Benjamin Franklin were alive today, he would likely remind us that all who would give up essential liberty to purchase a little temporary safety deserve neither liberty nor safety. He would also likely tell us that all who believe that they know the Truth ought to see the world anew."

Chapter 4, Boundless Liberalism, last paragraph

Added the paragraph:

"Benjamin Franklin provides us with one of the clearest expressions of boundless liberalism. In the midst of a war that started in his boyhood home and spread around the world, Franklin wrote the following to his fellow amateur scientist, Joseph Priestley:

"The rapid progress *true* science now makes, occasions my regretting sometimes that I was born so soon. It is impossible to imagine the height to which may be carried, in a thousand years, the power of man over matter. We may perhaps learn to deprive large masses of their gravity and give them absolute levity, for the sake of easy transport. Agriculture may diminish its labor and double its produce; all diseases may be by sure means prevented or cured, not excepting even that of old age, and our lives lengthened at pleasure even beyond the antediluvian standard. O that moral science were in a fair way of improvement, that men would cease to be wolves to one another, and that human beings would at length learn what they now improperly call humanity!"²⁰

"If Franklin were alive today, he would likely remind more bounded liberals that all who would give up essential liberty to purchase a little temporary safety deserve neither liberty nor safety, and that all who believe that they know the Truth ought to see the world anew."

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"²⁰ Franklin, Benjamin, *The Works of Benjamin Franklin*, edited by Jared Sparks, (Chicago: Townsend MacCoun, 1882), vol. V p 418. Searchable text available in Google books, (30 November 2008)."

Chapter 4, Summary and Conclusion, last paragraph

Changed "ever more justly, ever more wisely, ever more truly, and ever more coherently" to "ever more wisely" in the last sentence.

Appendix B, Heroic Death, last paragraph

Changed "foolish" to "shortsighted" in the last sentence.

Changes in Version 2008.12.03

Acknowledgments, fifth paragraph

Changed "a simple to use visual" to "an intuitive" in the fourth sentence.

Preface, seventh paragraph

Changed "for which I owe debts to" to "for which I owe debts to Benjamin Franklin," in the first sentence.

Chapter 4, The Explicit Experiment, second paragraph

Changed "Benjamin Franklin" back to "Arguably, Benjamin Franklin" in the third sentence.

Chapter 4, The Explicit Experiment, last paragraph, footnote

Changed "Benjamin Franklin's" to "this" in the first sentence.

Changes in Version 2008.12.05

Preface, fourteenth paragraph, third and fourth sentences

"These mistakes pile up. Unrelieved, this piling up of mistakes leads to major catastrophes, the sudden release of large amounts of stress."

were changed to:

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"Unrelieved the piling up of these mistakes leads to major catastrophes, the sudden release of large amounts of stress."

Chapter 1, A Holistic View of Deciding Well, third paragraph

Changed "have a constrained view of deciding well, and modern liberals have an unconstrained view of deciding well" to "tend to have a more constrained view than modern liberals do" in the fourth sentence.

Changed "constrained view" to "more constrained view" in the fifth sentence.

Chapter 3, Computer Models, first paragraph, footnote

"¹⁹ Note that the endless process of deciding well is a recursive process that involves learning by doing. Hence, we should expect power law rather than Gaussian distributions in the resulting phenomena. This is a testable hypothesis. For a clear and concise explanation of why this is important, see the March 23, 2006 *Financial Times* article by Benoit Mandelbrot and Nassim Taleb titled "A Focus on Exceptions that Prove the Rule," available online at <<u>http://www.ft.com/cms/s/2/5372968a-ba82-11da-980d-0000779e2340,dwp_uuid=77a9a0e8-b442-11da-bd61-0000779e2340.html> (4 July 2008)."</u>

was deleted.

Chapter 3, A Crude Look at the Whole, first paragraph

Inserted second paragraph and paragraph break behind first sentence.

Chapter 3, A Crude Look at the Whole, new second paragraph, last sentence

Added the footnote:

"²¹ The fractal process of deciding well is likely to produce fractal networks of knowledge-in-use, hence the release of "frozen" stress from these networks is likely to be fractal. For a clear and concise explanation of why this is important, see the March 23, 2006 *Financial Times* article by Benoit Mandelbrot and Nassim Taleb titled "A Focus on Exceptions that Prove the Rule," available online at <<u>http://www.ft.com/cms/s/2/5372968a-ba82-11da-980d-</u>0000779e2340,dwp_uuid=77a9a0e8-b442-11da-bd61-0000779e2340.html> (5 December 2008)."

Chapter 3, A Crude Look at the Whole, last paragraph

Deleted ", which include unemployment and inflation" from the second sentence.

Changed "major" to "civilization threatening" in the last sentence.

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Added the sentences: "To choose to ignore this "frozen" stress is not only to choose to live in a fool's paradise, but also to choose to bequeath the habits of living in a fool's paradise to future generations."

Changes in Version 2008.12.08

Acknowledgments, fifth paragraph

Changed "think" to "believe" in the fourth sentence.

Preface, seventh paragraph

"These mistakes pile up. Unrelieved, this piling up of mistakes leads to major catastrophes, the sudden release of large amounts of stress."

were changed to:

"Unrelieved, the piling up of these mistakes leads to major catastrophes, the sudden release of large amounts of stress."

Chapter 1, A Holistic View of Deciding Well, third paragraph

Changed "political divide between classical and modern liberals" to "current political divide" in the third sentence.

Changed "political divide between classical and modern liberals" to "current political divide" in the second sentence.

Changed "difference" to "divide" in the third and sixth sentences.

Changed "mothers" to "parents" in the sixth sentence.

Changed "Moral Politics: What Conservatives Know and Liberals Don't, (Chicago, University of Chicago Press, 1997)." to "Moral Politics: How Liberals and Conservatives Think, (Chicago, University of Chicago Press, 2002)" in the second footnote.

Changes in Version 2008.12.11

Preface, eleventh paragraph, last four sentences

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"So conceived, deciding well is a *self-similar universal invariant*, which is to say it is the same regardless of the scale of the temporal problem chosen, and that it is the same for all intelligent beings regardless of their circumstances and beliefs. So conceived, deciding well is also an economic process, which is to say that it is subject to constraints. If deciding well were not subject to constraints, there would be neither the need to distinguish between deciding and deciding well, nor the need to learn from experience."

were changed to:

"So conceived, deciding well is an economic process, which is to say that it is subject to constraints. If deciding well were not subject to constraints, there would be neither the need to distinguish between deciding and deciding well, nor the need to learn from experience. So conceived, deciding well is also a *self-similar universal invariant*, which is to say it is the same regardless of the scale of the temporal problem chosen, and that it is the same for all intelligent beings regardless of their circumstances and beliefs."

Preface, twelfth paragraph

Changed "learn that we ought to pursue" to "learn to pursue" in the third sentence.

Preface, second to last paragraph

Changed "short-sighted" to "shortsighted" in the fifth sentence.

Chapter 4, Control the Money Supply Passively, last paragraph

Changed "short-sighted" to "shortsighted" in the last sentence.

Chapter 4, Boundless Liberalism, second paragraph

Added the sentence: "Further, the modern liberal goal of social justice is nothing more than tribal justice in modern garb."

Appendix B, Worldly Benefits of Detachment, first paragraph

Changed "means of detaching" to "detaching" in the last sentence.

Changes in Version 2008.12.15

(Responses to Lissack edit)

Preface, second paragraph

"I knew that these tools could lead me astray by boxing me in with assumptions. I wanted something to help me know when analytical tools were leading me astray."

were changed to:

"I knew that these tools could lead me astray. I wanted something to help me know when I was in danger of being led astray."

Preface, sixth paragraph, end

Added the paragraph:

"To be complete, our search for knowledge must address the two-way relation between the world and the stories we use to explain the world. We base the stories we use to explain the world on the world. When we act on these stories, we change the world. We can address this problem, which modern philosophers of science call the *reflexivity problem*, by thinking of ourselves as embodied rather than unembodied intellects. This calls for considering what we need to believe well, which I call the demand side of science, before we consider what we may discover to be true, which I call the supply side of science. From this universal view of our search for knowledge, what Benjamin Franklin called *true science* is a special case."

Preface, ninth paragraph

"I wrote this work for people who are looking for tools for solving given problems. In the first section, I seek to convince these people of the need to distinguish between temporal and timeless ends. From this distinction, I develop a timeless concept of deciding well. In the balance of the work, I apply this decision-making concept to the timeless pursuits of living well, believing well, and governing well."

was changed to:

"I wrote this work to help people find better problems to solve. In the first section, I explain why it is important to distinguish between temporal and timeless ends. I go on to develop a timeless concept of deciding well. In the balance of the work, I apply this decision-making concept to the timeless pursuits of living well, believing well, and governing well."

Preface, last two paragraphs

"Scientists will likely find this work especially hard to understand. Studying what I call the *intelligent life sciences* calls for studying processes rather than states; for thinking in the first person plural rather than in the passive voice; for distinguishing between the tools we use to solve problems and the tools we use to find problems to

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solve; and for thinking about goals in terms of what we need before thinking about what may be possible. In short, it calls for a radically different mindset than studying what Benjamin Franklin called the *true sciences*.

"Enjoy."

were changed to:

"It took a devastating forest fire in Yellowstone National Park to change the prevailing view of how we ought to manage forests. It will likely take an equally devastating human debacle to change the prevailing view of how we ought to manage ourselves. The current debacle, which opened with the 2008 financial sector collapse, may prove to be such an event.

"S. M. Harris "December 15, 2008"

Chapter 1, A Holistic View of Deciding Well, third paragraph

Changed "think deeply" to "think" in the first sentence.

Chapter 1, A Holistic View of Deciding Well, fifth paragraph, last sentence

"We are as researchers in the research program of, by, and for intelligent life."

was deleted.

Chapter 1, Temporal versus Timeless Values, eleventh paragraph, first six sentences

"The first step in setting this course is to create the concepts of bounded and boundless factors of deciding well. A bounded factor is any factor that we can have in excess. Freedom, trust, and scarce resources are bounded factors. For example, we do not need the freedom to cripple or kill our business competitors, boundless trust in the integrity of stock brokers, or a different luxury car for each day of the week. In contrast, a boundless factor is any factor that we cannot have in excess. The Good, the Truth, and Wisdom are boundless factors."

were changed to:

"The first step in setting this course is to distinguish between the factors of deciding well that we can have in excess, which we may call *bounded factors of deciding well*, and factors of deciding well that we can never have in excess, which we may call *boundless factors of deciding well*. Freedom, trust, and scarce resources are bounded factors of deciding well. For example, we do not need the freedom to cripple or kill our business competitors, boundless trust in the integrity of stock brokers, or a

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different luxury car for each day of the week. In contrast, the Good, the Truth, and Wisdom are boundless factors of deciding well."

Chapter 1, Timeless Tools for Living Well, last paragraph

Changed "provides us with" to "offers" in the last sentence.

Chapter 2, Wisdom, last paragraph

Changed "form" to "form what we know as" in the last sentence.

Chapter 2, Tools for Pursuing Wisdom, last paragraph, first two sentences

"These tools help us choose the right path, the path of the pursuit of pleasure and joy. We also need tools to help us stay on this path."

were changed to:

"In addition to tools for helping us choose a wise course of action, we also need tools for staying true to the course of action we believe to be wise. In philosophical terms, we need tools to help us be continent."

Chapter 2, Timeless Trade, last paragraph, end

Added the footnote:

"⁶ The new structure of the financial sector was one of many contributing factors to the 2008 financial debacle. A major question for policymakers is how best to learn about how such factors interact with mistakes embedded in our networks of knowledge-inuse. Do we need bad times to reveal how these factors interact with embedded mistakes? Is investor Warren Buffett's observation that "only when the tide goes out do you discover who's been swimming naked" true? If so, is it better to have frequent small downturns or less frequent large ones?"

Chapter 2, The Need for Timeless Science, first paragraph

Changed "outlines" to "describes" in the last sentence.

Chapter 3, Pursuing the Ring of Truth, fifth paragraph

Changed "depends" to "in part depends" in the first sentence.

Chapter 3, *Learning from Experience*, first paragraph

Deleted the last sentence: "We can even simulate decisions."

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Changed "reality." to "reality:" in the new last sentence.

Chapter 3, Computer Models

"Computer Models In mathematical terms, deciding well involves two types of discontinuities. First, the way in which we turn new information into new applications of useful knowledge is discontinuous. New information may or may not cause us to form a mental pattern that leads to new useful knowledge. Second, the decision to apply new knowledge is discontinuous. New useful knowledge may or may not cause us to apply new useful knowledge. Because of these discontinuities, a small change can have a small effect, no effect, or a large effect. A small rise in the price of a raw material might (1) cause firms to react as modern economists predict; (2) have no immediate effect; or (3) trigger a firm to adopt a new process that changes the industry. To explain this, we must explain the dynamics of knowledge-in-use, which includes the complex dynamic between the stories that we use to guide our actions and reality.

"Agent-based computer simulations of the imperfect flow of resources should explain what modern economists call Kondratieff waves, business cycles, and speculative bubbles. The purpose of these high-level models of imperfect flow ought to be to improve flow by improving the quality of decision-making. The unrelenting pressure to replace non-knowledge resources with knowledge resources suggests the metaphor of a near freezing river filled with blocks of ice of various shapes and sizes, which represent parts of our networks of useful knowledge. In complexity science terms, these blocks are "frozen accidents." The best way to avoid a debacle, the sudden release of a large amount of stress, is to prevent embacles, the piling up of frozen accidents under stress. We prevent embacles by deciding well.

"In time, experts will learn more about deciding well from studying computer models. People who seek to decide well will use this knowledge to find problems to solve. They will also learn from the experience.¹⁹"

"¹⁹ This conflicts with the belief of Austrian School economists that we do not need to test theories that explain human action. It also conflicts with the closely related belief of some complex adaptive system scientists that we do not need to test computer models of emergent phenomena. See Lissack, M. R., & Richardson, K. A, "When Modeling Social Systems, Models \neq The Modeled: Reacting to Wolfram's A New Kind of Science," *Emergence*, 2001, Vol. 3, No. 4, 95-111."

was deleted.

Chapter 3, A Crude Look at the Whole, second paragraph, last sentence

"These releases disrupt the "natural" level of turbulence"

were changed to:

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"These unpredictable²⁰ releases disrupt the "natural" level of turbulence.

"The unrelenting pressure to replace non-knowledge resources with knowledge resources suggests the metaphor of a near freezing river filled with blocks of ice of various shapes and sizes, which represent parts of our networks of knowledge-in-use. In complexity science terms, these blocks are "frozen accidents." The best way to avoid a debacle, the sudden release of a large amount of stress, is to prevent embacles, the piling up of frozen accidents under stress. We prevent embacles by deciding well."

"²⁰ In mathematical terms, deciding well involves two types of discontinuities. First, the way in which we turn new information into new applications of useful knowledge is discontinuous. New information may or may not cause us to form a mental pattern that leads to new useful knowledge. Second, the decision to apply new knowledge is discontinuous. New useful knowledge may or may not cause us to apply new useful knowledge. Because of these discontinuities, a small change can have a small effect, no effect, or a large effect. A small rise in the price of a raw material might (1) cause firms to react as modern economists predict; (2) have no immediate effect; or (3) trigger a firm to adopt a new process that changes the industry. Agent-based computer simulations of this complex phenomenon should explain what modern economists call Kondratieff waves, business cycles, and speculative bubbles. The purpose of these high-level models ought to be to help us to find better problems to solve. We should test these models by testing how well they help us to find problems to solve. This conflicts with the belief of Austrian School economists that we do not need to test theories that explain human action. It also conflicts with the closely related belief of some complex adaptive system scientists that we do not need to test computer models of emergent phenomena. See Lissack, M. R., & Richardson, K. A, "When Modeling Social Systems, Models ≠ The Modeled: Reacting to Wolfram's A New Kind of Science," Emergence, 2001, Vol. 3, No. 4, 95-111."

Chapter 4, The Explicit Experiment, second paragraph

Changed "truly exceptional" to "exceptional" in the first sentence.

Merged this paragraph with the first paragraph.

Appendix B, Introduction, first paragraph, first sentence

"The main problem in developing means of weeding out unjust, unethical, or unwise stories is agreeing on metaphysical assumptions about our nature."

was changed to:

"This work defines deciding well as a *self-similar universal invariant*, which is to say as something that remains the same regardless of the temporal problem scale we choose, and regardless of our circumstances and beliefs. We can learn ever more about deciding well, so defined, by studying it at various temporal problem scales, in various

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decision-making circumstances, and within various belief systems. As in studying modern physics, we can learn much by considering extreme cases. Here, we consider the spiritual aspects of living well.

"From the temporal view, one of the major problems in developing means of weeding out unjust, unethical, or unwise stories is agreeing on metaphysical assumptions about our nature."

Appendix B, Introduction, second through last paragraphs

Moved these paragraphs to the beginning of the next section, **The Farther Reaches of Human Nature**.

Appendix B, The Further Reaches of Living Well, new sixth paragraph

Changed "psychology" to "humanistic psychology" in the first sentence.

Merged paragraph into the fifth paragraph.

Appendix B, Deciding Reverently, last paragraph, last sentence

"More likely than not, such confusion will slow progress towards the timeless end of revering life well."

was changed to:

"We revere life well by deciding well, not by forcing our personal faith on others."

Changes in Version 2008.12.16

Preface, second to last paragraph

Changed "not only create turbulence in the flows of economic resources, but also embed mistakes into our networks of knowledge-in-use" to "embed mistakes into, or reinforce mistakes in, our networks of knowledge-in-use" in the second sentence.

Added the sentence: "We tend to discover and release more of these embedded mistakes in bad economic times."

Chapter 1, A Holistic View of Deciding Well, third paragraph

Changed "choose to frame (conceptualize) the world" to "frame the world, which is to say how we reduce what we sense to concepts" in the third sentence.

Chapter 1, Two Views of Deciding Well, last paragraph

Changed "embed mistakes into" to "embed mistakes into, or reinforce mistake in," in the third sentence.

Chapter 1, Temporal versus Timeless Values, first paragraph

Changed "decide well under constraints" to "decide well" in the third sentence.

Chapter 1, Temporal versus Timeless Values, fourth paragraph, second to last sentence

"This awkward fact raises doubts about the validity of such general beliefs as all crows are black, all ice cubes are cold, and the laws of physics are true."

was moved the end of the paragraph and changed to:

"This well-known but often ignored problem raises doubts about the validity of such general beliefs as all crows are black, all ice cubes are cold, and the speed of light is a *universal invariant*."

Changed "laws of physics are true" to "speed of light is a *universal invariant*" in the second to last sentence.

Chapter 3, Refining Stories, third paragraph, first two sentences

"From the timeless view of deciding well, defining what we ought to seek as something other than those things that we need to decide well leads us to act foolishly. Worse, it causes us to embed mistakes into our networks of knowledge-in-use, that is, into our markets, technologies, legal systems, languages, and cultures."

were changed to:

"From the timeless view of deciding well, defining what we ought to seek as something other than those things that we need to decide well leads us to embed mistakes into, or reinforce mistakes in, our networks of knowledge-in-use, that is, into our markets, technologies, legal systems, languages, and cultures."

Chapter 3, A Crude Look at the Whole, second paragraph

Changed "embed mistakes into" to "embed mistakes into, or reinforce mistake in," in the eighth sentence.

Acknowledgments, fifth paragraph

Changed "lowers the cost of learning by dramatically lowering the cost of communicating what we believe we know and do not know about any financial decision-making situation" to "dramatically lowers the cost of learning from others and from experience" in the fourth sentence.

Changed "imagine what we don't know" to "the many ways we cope with what we don't know" in the seventh sentence.

Acknowledgments, last paragraph

Changed "death" to "death in 2003" in the third to last sentence.

Preface, seventh paragraph

Changed "complete, our search for knowledge" to "boundless, science" in the first sentence.

Changed "universal view of our search for knowledge" to "timeless view of science" in the last sentence.

Chapter 1, Setting Words Aright, last paragraph

Changed "if we are to decide well" to "if we are to decide *ever better*" in the last sentence.

Chapter 2, Three Mistakes, second paragraph, last two sentences

"For example, teak from a certified source may be more valuable to us than teak of unknown origin. Buying from good suppliers can help us satisfy our need to be part of something greater than ourselves."

was changed to:

"For example, buying teak from a source certified to grow and harvest teak in an environmentally friendly way can help us satisfy our need to be part of something greater than ourselves, and so may be worth more to us than buying otherwise identical teak from an uncertified source."

Chapter 2, Timeless Production, first paragraph

Changed "learning-by-doing" to "learning-by-doing, for pushing back our efficiency frontiers" in the last sentence.

Changed ", hence" to "; hence" in the second and fourth sentences (2 occurrences).

Chapter 2, Timeless Profit, first paragraph

Changed "learning" to "what we learn" in the fourth and last sentences (2 occurrences).

Changes in Version 2008.12.24

Acknowledgments, fifth paragraph

Deleted "about ethics and economics" from the second to last sentence.

Changed "work" to "book" and "my" to "the" in the last sentence.

Preface, seventh paragraph, fourth sentence

"This calls for considering what we need to believe well, which I call the demand side of science, before we consider what we may discover to be true, which I call the supply side of science."

was changed to:

"The harsh fact of our existence as embodied intellects reminds us that the endless pursuit of believing well is an economic process, which is to say a process subject to constraints."

Preface, eighth paragraph

Changed "decision-making concept" to "timeless decision-making concept" in the last sentence.

Preface, tenth paragraph, end

Added the sentence: "So conceived, deciding well plays the role in the *intelligent life sciences* that natural selection plays in the biological sciences. It is the idea that pulls the field together into a coherent whole."

Chapter 1, Temporal versus Timeless Values, last paragraph, last sentence

"By similar reasoning, all endless pursuits of boundless factors intertwine into a single endless pursuit, which we may call the timeless pursuit of deciding well."

was changed to:

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"Further, the better we decide, the tighter we intertwine the pursuits of the Good and the Truth. By similar reasoning, all pursuits of boundless factors intertwine into a single pursuit, which we may call the timeless pursuit of deciding well. Further, the better we decide, the tighter we intertwine all pursuits of boundless factors into the timeless pursuit of deciding well."

Chapter 2, *Three Mistakes*, title

Changed title back to "Three Common Mistakes."

Chapter 3, Control the Money Supply Passively, last paragraph

Changed "shortsighted" to "as shortsighted as seeking to prevent all forest fires" in the last sentence.

Chapter 3, *A Crude Look at the Whole*, second paragraph, last footnote, first sentence

"The fractal process of deciding well is likely to produce fractal networks of knowledge-in-use, hence the release of "frozen" stress from these networks is likely to be fractal."

was changed to:

"The structure and dynamics of our networks of knowledge-in-use is a great mystery. We may speculate that the releases of large amount of stress is, in part, cyclical. It takes time to accumulate enough stress to cause a major catastrophe. However, it is also clear that a major release of stress in one area may be quickly followed by a major release of stress in another area. For example, a political turbulence in the form of revolution or war may follow a major financial collapse. We may also speculate that the release of stress from these networks has a probability distribution with a fat tail."

Chapter 4, Boundless Liberalism, last paragraph, last sentence

"If Franklin were alive today, he would likely remind more bounded liberals that all who would give up essential liberty to purchase a little temporary safety deserve neither liberty nor safety, and that all who believe that they know the Truth ought to see the world anew."

was changed to:

"If Franklin were alive today, he would likely remind us that all who would give up essential liberty to purchase a little temporary safety deserve neither liberty nor safety. From the timeless view of science expressed in this letter to Priestley, it takes little effort to imagine what he would make of the many modern means of protecting the

politically powerful at the expense of the rest of humanity, to say nothing of the rest of life."

Changes in Version 2008.12.26

Entire Document

Checked links and updated link dates on all references with links to Internet sites.

Preface, seventh paragraph

Changed "From this timeless view of science" to "From this timeless view" in the last sentence.

Chapter 3, A Crude Look at the Whole, third paragraph

The eighth through last sentences of the first footnote were moved to a new footnote at the end of the fourth paragraph.

Chapter 4, A Sovereign Story of Timeless Science, third paragraph

Changed "ever more justly, ever more wisely, ever more truly, and ever more coherently" to "ever more wisely, hence ever more justly, ever more truly, and ever more coherently" in the third sentence.

Changes in Version 2008.12.31

Preface, fifth paragraph

Changed "concepts that we use to express our beliefs" to "concepts we use" in the last sentence.

Preface, ninth paragraph

Changed "unmanageable whole into manageable parts" to "unwieldy whole into parts" in the first sentence.

Preface, second to last paragraph

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Changed "in bad economic times" to "when the stress we experience is great enough to prompt us to decide well but not great enough to retard us from deciding well" in the fifth sentence.

Chapter 1, A Holistic Approach to Deciding Well, fifth paragraph

Changed "economic resources" to "scarce resources" in the first sentence.

Chapter 1, A Holistic Approach to Deciding Well, last two paragraphs

Merged the last two paragraphs.

Chapter 3, The Ring of Truth, third paragraph

"What we find too easy or too hard in part depends on our knowledge of what we are contemplating. Knowledge may make objects easier to contemplate. This may make objects either more or less capable of yielding pleasure in contemplation. For example, knowledge of the structure of classical music may turn Beethoven's symphonies from being overwhelming to being beautiful. It may also turn rock music from being beautiful to being boring. At times, knowledge may also make objects harder to contemplate. This may make objects either more or less beautiful. For example, knowledge of the patterns of nature may turn Edo period architecture from being boring to being beautiful. It may also turn Rococo architecture from being beautiful to being overwhelming."

was merged into the second paragraph and changed to:

"Learning about the structure of classical music may turn Beethoven's symphonies from being overwhelming to being beautiful. Learning about the patterns of nature may turn Edo period architecture from being boring to being beautiful."

Chapter 3, Refining Everyday Thinking, fifth paragraph

Changed "test" to "can test" in the second sentence.

Chapter 3, Refining Everyday Thinking, sixth paragraph

"Every time we choose to act or not to act, we test our beliefs against experience. We bet our welfare on beliefs based upon imperfect knowledge. Others learn from our experiences. We, in turn, learn from theirs. *We are born to be both researchers and research subjects in the research program of, by, and for intelligent life*.¹⁰"

was changed to:

"Other parts of the world appear too complex for us to use a single story to predict and explain. Within these seas of apparent complexity, we can test the stories that we use

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to predict by how well they help us predict and can test the stories we use to explain by how well they help us find problems to solve.

"There is strong reason to believe that whenever we use stories about the world to guide our actions we sail into seas of complexity. This is because there is a two-way relation between the world and the stories we use to guide our actions. We base the stories we use to guide our actions on the world. Our actions change the world. Consider the statement, "Tulips are a good investment." If enough people use this story to guide their actions, the price of tulips will rise enough for tulips to become a poor investment. The action of buying tulips undermines the story that tulips are a good investment.

"The two-way relation between the world and the stories that we use to guide our actions gives rise to a wide variety of phenomena, which range from simple speculative bubbles to complex systems of human organizations. We can think about the cause of these phenomena as the interplay of two tendencies of the stories that we use to guide our actions. The first is their tendency to become more popular, which, in part, is due to the inexhaustibility of knowledge. The second is their tendency to undermine the conditions on which we base them. Repeatedly using these stories to guide our actions without considering how our actions change reality tends to lead us ever further away from the best means of living well. When these two tendencies unite, they lead us ever further away from these ideal means. The further we are from these means, the greater is the potential for catastrophes caused by the sudden replacement of knowledge for non-knowledge resources.

"From the modern view, the relation between the world and the stories we use to guide our actions is a problem for us in understanding the world.⁹ From the timeless view of deciding well, this relation is an opportunity to change the world for the better by using stories about the timeless end of deciding well to help us find problems to solve. From this timeless view, every time we choose to act or not to act, we test our beliefs against experience. We bet our welfare on beliefs based upon imperfect knowledge. Others learn from our experiences. We, in turn, learn from theirs. *We are born to be both researchers and research subjects in the research program of, by, and for intelligent life.*¹⁰"

"⁹ Most modern intellectuals prefer 'reflexive' to 'recursive' to describe this complex dynamic. Arguably, this is because they see their role as seeking the temporal truth rather than seeking the boundless factors of deciding well. We see this in the distinction between Thomas Kuhn's concept of a paradigm shift as a change in the way we conceive of the world and the popular concept of a paradigm shift as a change in the way we see the world that changes the world. By taking a longer view, people who care more about living well than about understanding the world as it currently is shifted Kuhn's paradigm paradigm."

Chapter 3, Refining Deciding Well, first paragraph

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"If we all decided well all of the time, we should not need to distinguish between the stories that we use to predict and those that we use to explain. Given that we all do not decide well all of the time, we should distinguish between them. Failing to do so will tend to blind us to the possibility of learning."

was merged into the second paragraph and changed to:

"The two-way relation between the world and the stories we use to guide our actions calls for us to distinguish between the stories we use to predict and the stories we use to explain."

Chapter 3, Refining Stories, entire section

Merged this subsection into the Refining Deciding Well section.

Chapter 3, Refining Deciding Well, new second paragraph, first sentence

"The timeless concept of science outlined above calls for us to refine the set of stories that we use to predict what will happen."

was changed to:

"The timeless concept of science described above calls for us to refine the set of stories that we use to predict what will happen by how well they help us predict what will happen."

Chapter 3, Refining Deciding Well, new third paragraph, first sentence

"The timeless concept of science outlined above also calls for us to refine the set of stories that we use to explain what happens."

was changed to:

"The timeless concept of science also calls for us to refine the set of stories that we use to explain what happens by how well they help us find temporal problems to solve."

Chapter 3, Learning Through Experience, first paragraph

Changed "As in other activities, we" to "We" in the first sentence.

Deleted the eighth sentence: "For example, we can look for failures that concern trading or failures that concern the complex dynamic between the world and the stories that we use to guide our actions:"

Chapter 3, Learning Through Experience, second paragraph

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"Trading Failures The uneven flow of resources wastes time and other resources. Capturing the benefit of smoothing this flow may call for trading with those hurt by the uneven flow. Mistrust and/or ignorance of better means of trade may constrain us from smoothing the flow. Examples of trading failures uncovered by comparing Western industrial age manufacturing practices to the Toyota system include (1) distributors who fail to share knowledge about their customers with their suppliers for fear of losing business; (2) workers who fail to tell their bosses about foolish procedures for fear of losing work; and (3) workers who lose their jobs during slow times because their labor contracts do not let wages fall. Yet unsolved examples of trading failures include people who fail to discover their genetic predispositions for fear of losing their health insurance coverage, and employees who stay in unsuitable jobs for fear of losing employee benefits. In time, we will learn to solve the trade problems that give rise to these decision failures."

was changed to:

"One such pattern concerns trading problems that give rise to the uneven flow of resources. The uneven flow of resources wastes time and other resources. Smoothing this flow often calls for trading. Mistrust and ignorance of better means of trade often constrain us from making such trades. Trading problems that give rise to uneven flow that Toyota and others have solved include (1) distributors who fail to share knowledge about their customers with their suppliers for fear of losing business; (2) workers who fail to tell their bosses about foolish procedures for fear of losing work; and (3) workers who lose their jobs during slow times because their labor contracts do not let wages fall. Many other trading problems that give rise to uneven flow have yet to be discovered and solved."

Chapter 3, Learning Through Experience, last five paragraphs

"*Recursive Failures* There is a two-way relation between the stories that we use to guide our actions and reality. We base the stories we use to guide our actions on reality. Our actions change reality. Consider the statement, "Tulips are a good investment." If enough people use this story to guide their actions, the price of tulips will rise enough for tulips to become a poor investment. Also consider the statement, "I can benefit by violating the trust others put in me." If enough people use this story to guide their actions, everyone will soon put less trust in others. This two-way relation between the stories that we use to guide our actions and reality gives rise to a wide variety of phenomena, which range from simple speculative bubbles to complex systems of human organizations.¹⁸

"We can think about the cause of these phenomena as the interplay of two tendencies of the stories that we use to guide our actions. The first is their tendency to become more popular, which, in part, is due to the inexhaustibility of knowledge. The second is their tendency to undermine the conditions on which we base them. Repeatedly using these stories to guide our actions without considering how our actions change reality tends to lead us ever further away from the best means of living well. When

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these two tendencies unite, they lead us ever further away from these ideal means. The further we are from these means, the greater is the potential for catastrophes caused by the sudden replacement of knowledge for non-knowledge resources.

"We can aspire to be wise by using timeless stories to find temporal problems or pretend to be certain by using temporal stories to find problems. A good example of pretending to be certain is the modern economic national accounting system. Imagine a pill that makes people decide better. Releasing this product would change how people decide to live. Some parts of the economy would shrink and other parts would grow. Resources would flow from the shrinking parts to the growing ones. The immediate effect would be a fall in aggregate production and a rise in unemployment. Modern economic science would portray one of the greatest advances in human history as a disaster.

"The problem here is one of how to measure what we need to live well, which calls for knowing the Truth about the Good. Plato only aspired to such knowledge. Only a fool would claim to have found it. From a technical view, the problem of measuring services is universal and the problem of measuring quality is impossibly hard.

"An accounting truism holds that accounting systems promote what we measure at the expense of what we do not measure. Soviet central planners learned this the hard way. When they set screw factory quotas by the quantity of screws produced, factory managers produced too few big screws and too many small screws. When they set quotas by the weight of screws produced, managers produced too many big screws and too few small screws. The solution to our national income accounting problems will be similar to the solution to the Soviet accounting problems. We will replace our decision-making system with one that depends less on problematic measurements. The question is whether we will wait for a major catastrophe before making this change."

"¹⁸ Most modern intellectuals prefer 'reflexive' to 'recursive' to describe this complex dynamic. Arguably, this is because they see their role as seeking the (temporal) truth rather than seeking the boundless factors of deciding well. We see this in the distinction between Thomas Kuhn's concept of a paradigm shift as a change in the way we conceive of the world and the popular concept of a paradigm shift as a change in the way we see the world that changes the world. By taking a longer view, the crowd shifted Kuhn's paradigm paradigm."

were changed to:

"Another such pattern concerns using temporal tools to find temporal problems to solve. Perhaps the best example of this is the modern economic national accounting system. Imagine a pill that makes people decide better. Releasing this product would change how people decide to live. Some parts of the economy would shrink and other parts would grow. Resources would flow from the shrinking parts to the growing ones. The immediate effect would be a fall in aggregate production and a rise in

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unemployment. Modern economic science would portray one of the greatest advances in human history as a disaster.

"The problem here is one of how to measure what we need to live well, which calls for knowing the Truth about the Good. Plato only aspired to such knowledge. Only a fool would claim to have found it. From a technical view, the problem of measuring services is universal and the problem of measuring quality is impossibly hard.

"An accounting truism holds that accounting systems promote what we measure at the expense of what we do not measure. Soviet central planners learned this the hard way. When they set screw factory quotas by the quantity of screws produced, factory managers produced too few big screws and too many small screws. When they set quotas by the weight of screws produced, managers produced too many big screws and too few small screws. The solution to our national income accounting problems will be similar to the solution to the Soviet accounting problems. We will replace our decision-making system with one that depends less on problematic measurements. The question is whether we will wait for a major catastrophe before making this change."

Chapter 3, Conclusion, second paragraph

Changed "our beliefs and reality" to "the world and our beliefs about the world" in the fourth sentence.

Chapter 4, Sovereignty, third paragraph

Changed "modern democracies" to "democratic republics" in the second sentence.

Chapter 4, Boundless Liberalism, last paragraph

"If Franklin were alive today, he would likely remind us that all who would give up essential liberty to purchase a little temporary safety deserve neither liberty nor safety. From the timeless view of science expressed in this letter to Priestley, it takes little to imagine what he would say about the many modern means of protecting the politically powerful at the expense of the rest of humanity, to say nothing of the rest of life.

was changed to:

"If Franklin were alive today, we can easily imagine what he would say about the many modern political means of aiding the powerful at the expense of the rest of humanity, to say nothing of the rest of life."

Appendix A, Less is More, last paragraph

Changed "structure" to "structure and dynamics" in the fourth sentence.

Appendix B, Introduction, first paragraph

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Changed "so defined" to "so conceived" in the second sentence.