



# POLANYI AND KAHNEMAN AND ON JUDGING AND DECIDING<sup>1</sup>



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## ABSTRACT

*Similarities between what Michael Polanyi and Daniel Kahneman wrote about the acts of judging and deciding are partly the result of taking seriously the findings of Gestalt psychology. Both men treat acts of judging and deciding as analogous to acts of perceiving. This similarity is the reason that the differences between Kahneman and Polanyi are mostly complementary, rather than contradictory. Among the things Polanyians can contribute to the interdisciplinary field of judgment and decision making are commitment, the from-to structure, and the image of leaping across a logical gap. Among the things Polanyians can learn from Kahneman is a pragmatic distinction between judging and deciding, a distinction between fast and slow thinking, and a heightened awareness of the many ways tacit heuristics and biases lead to mistaken judgments and bad decisions.*

In their preface to the *Blackwell Handbook of Judgment and Decision Making*, the editors Derek Koehler and Nigel Harvey (2002, xiv) say:

Understanding how people make judgments and decisions is an enterprise of such importance that its study is spread across many disciplines. The recent Nobel Prize in Economics awarded to Daniel Kahneman, for work conducted with the late Amos Tversky, is a particularly vivid indication of the increasing recognition and impact of the field.<sup>2</sup>

In this essay, by “the field” I will mean the interdisciplinary effort to understand how people judge and decide. Kahneman is a psychologist, and his work with Tversky is considered to be the psychological foundation for behavioral economics, as well as for the study of how people judge and decide in law, medicine and business. The contributors to the *Blackwell Handbook* recognize the importance to the field of texts written by Kahneman—there are 196 entries following his name in the index. Michael Polanyi is mentioned just once, briefly, as having written about the distinction between tacit and explicit knowledge (Phillips,

Klein and Sieck 2002, 301). I believe that despite the limited attention given to Polanyi in the *Blackwell Handbook*, texts by and about Polanyi have significant bearing on the field.

I *decided* to study similarities and differences between Kahneman and Polanyi after I read in Michael Lewis' *The Undoing Project: The Friendship that Changed Our Minds* (2017, 70; hereinafter *UP*) that Kahneman, like Polanyi (*PK*, vii), takes Gestalt psychology seriously. That decision was based on my tentative *judgment* that both men used Gestalt psychology's findings about acts of perception as heuristic models for thinking and writing about acts of judging and deciding. The way I just used "decided" and "judgment" hints at what I call a "pragmatic distinction" between acts of judging and acts of deciding. My decision to explore similarities and differences between the ideas of these two men resulted in two fairly firm judgments, which I express in these two assertions: (1) Polanyians have much to contribute to the field, and (2) The field, as represented by Kahneman, can contribute to Polanyian studies.

### What Polanyians Can Bring to the Field

Three things Polanyians can bring to this field are: (1) personal commitment, (2) the *from-to* model, and (3) the image of leaping across a logical gap.

#### *Personal Commitment*

The field can benefit from more attention to the state of commitment that makes a person's judging and deciding responsible. Much of the applied work in the field focuses on improving the quality of judgments and decisions. Jonathan Baron, a contributor to the *Blackwell Handbook*, distinguishes between three distinct, but interrelated, models for thinking and writing about judgments and decisions.

One task of our field is to compare judgments to normative models. We look for systematic deviations from the models. These are called biases. If no biases are found, we may try to explain why not. If biases are found, we try to understand and explain them by making descriptive models or theories. With normative and descriptive models in hand, we can try to find ways to correct the biases, that is, to improve judgments according to the normative standards. The prescriptions for such correction are called prescriptive models (Baron 2002, 19).

This is Baron's model. I will change his language a bit, saying that models of judging and deciding have three aspects or dimensions: normative, descriptive, and prescriptive. Baron's model is partly prescriptive. He is preaching to workers in the field, telling them what they *ought* to do. What he thinks researchers ought to do is the normative dimension of his model. This, however, is related to his descriptions of the actual behavior of workers in the field. His prescription is based on the normative and descriptive dimensions of his model. In writing these lines, Baron was practicing what he was preaching. It is "performative consistency" in that what he said is consistent with what he was doing by saying that.

Kahneman and Tversky called their collaborative work their "undoing project" and Lewis incorporated this phrase into the title of his book about their friendship. What Kahneman and Tversky "undid" was the prevailing model in economic theory, a model that is prescriptive, normative, and descriptive. The norm or rule that's at the heart of this model, expressed in popular terms, is "buy cheap; sell dear." But in economic theory, this norm wasn't simply pragmatic advice for how to maximize profits: it became a key

element in general descriptions of economic activity. Kahneman uses the term “Econ,” as coined by the behavioral economist Richard Thaler, to point to the model of a person in economic theory. Descriptively, an Econ is fully “rational,” completely selfish, and his preferences never change. Prescriptively, this is how an Econ *ought* to be and to act. Kahneman follows Thaler in contrasting Econs with “Humans,” who aren’t always rational, selfish, or consistent. Kahneman and Tversky sought to undo the model that had informed economic theory by looking for biases. Another way of putting this is that they put much more emphasis on descriptions of the judging and deciding of Humans, than they did on the normative dimension of the standard economic model.

This emphasis on subordinating the normative and prescriptive dimensions to descriptions of actual behavior of persons is one of the commonalities between the work of Polanyi and that of Kahneman. Personal commitment is, first, a descriptive element in Polanyi’s account of judging and deciding. To judge and to decide are both acts of personal commitment. There are over 80 references to “commitment” in the index to *Personal Knowledge*. There are none in the index of *Thinking, Fast and Slow*, and none in the index to *The Blackwell Handbook of Judging and Decision Making*. I consider this to be a major omission.

Polanyi didn’t use “undoing project” to describe his work, but I interpret his statement of intention in the preface to *Personal Knowledge* as an undoing project. He said (*PK*, xiii), “I start by rejecting the ideal of scientific detachment.” He also called this normative ideal “objectivism” and “impersonal knowing.” The message of *Personal Knowledge* is his attempt to establish a different ideal of knowing. Marjorie Grene (1995-96, 9) said that the message of *Personal Knowledge* is expressed “in a nutshell” in the following text:

It is the act of commitment in its full structure that saves personal knowledge from being merely subjective. Intellectual commitment is a responsible decision, in submission to the compelling claims of what in good conscience I conceive to be true. It is an act of hope, striving to fulfil an obligation within a personal situation for which I am not responsible and which therefore determines my calling. This hope and this obligation are expressed in the universal intent of personal knowledge (*PK*, 65).

This is a statement of Polanyi’s model. It is similar to Baron’s model in containing normative, descriptive, and prescriptive dimensions, but very different because of its emphasis on the act of commitment.

The meanings I attribute to Polanyi’s “nutshell text” depend upon making explicit an implicit distinction between acts of commitment in knowing and states of commitment. to knowledge that has already been achieved. By using the phrase “good conscience,” Polanyi asserts that in acts of knowing, he is able and willing to perform several acts of commitment: (1) to submit to what he conceives to be true, (2) to recognize that this act of submission is a personal obligation, (3) to respond to a calling for which he is not responsible, and (4) to hope that his acts and states are not “merely subjective.” These elements comprise the structure of commitment, justifying the normative ideal of personal knowledge: Polanyi’s alternative to the destructive normative ideal of impersonal, detached, “objectivist” knowledge.

In the introduction to *The Tacit Dimension*, Polanyi says that over the years since the publication of *Personal Knowledge* and *The Study of Man* in 1958, he has reduced his “reliance on the necessity of commitment” by working out the *from-to* structure of knowing and doing (*TD*, xvii).<sup>3</sup> But there is a paragraph in the final chapter in which he re-emphasizes the importance of commitment in his model of judging and deciding. His description of the structure of commitment is a bit different from the language of Grene’s “nutshell” text, but the message has not changed. The first sentence suggests that the topic of the paragraph

is “responsible judgment,” but the final sentence returns to a statement about the how the structure of commitment makes acts of judging and deciding responsible.

I have shown how man can exercise responsible judgment when faced with a problem. His decisions when casting around for a solution are necessarily indeterminate, in the same sense that the solution of an unsolved problem is indeterminate; but his decisions are also responsible in being subject to the obligation to seek the predetermined solution of his problem. I have said that this is a commitment to the anticipation of a hidden reality, a commitment of the same kind as exemplified in the knowledge of scientific truth. Responsibility and truth are in fact but two aspects of such a commitment: the act of judgment is its personal pole and the independent reality on which it bears is its external pole (*TD*, 87).

I interpret the final sentence as suggesting that Polanyi now points to four dimensions to the structure of commitment: the two “aspects,” responsibility and truth, and the two “poles,” the act of judgment and the independent reality on which this act bears.

I consider the image of the two poles, one personal (and, I would add, “internal”) and one “external” to be an assertion by Polanyi of his commitment to realism, both epistemological and ontological. It is also an important illustration of *one* of the meanings he attributed to “judgment.” In what I regard as a definitive essay on Polanyi’s uses of the word “judgment,” D.M. Yeager (2008, 101) quotes the final sentence of this paragraph immediately before saying: “The act (and art) of personal judgment is, in fact, the core of his [Polanyi’s] distinctive conception of the nature of knowing as he develops it in interlocking texts over several decades.”

#### *From-Via-To*

Walter Gulick (1999-2000, 2012-2013) has added a *via* term to Polanyi’s *from-to* model, suggesting that a knower moves from a set of particulars *via* symbols to the skillful achievement. By contrast, I define *via* as the acts of judging or deciding. I move *from* a prior state *via* an act of judging or deciding *to* a subsequent state.

Polanyi describes the ideal state prior to judging responsibly both in the nutshell text and the poles text. To be responsible, I must be committed to discovering whether a sentence is true or false, or whether something other than a sentence is good or bad. One aspect of this commitment is my self-accreditation (*PK*, 265), my reasonable hope that I can rightly judge truth, falsity, goodness and badness.

The ideal state prior to deciding responsibly has the further dimension of a commitment to “performative consistency.” Polanyi doesn’t use this term, but I argue that it is implied in his frequent references to “good conscience.” It is also implied by his use of retortion, the argument from performative inconsistency, to refute positions to which he is opposed (Moleski 1987). It is the commitment that results from following the Jiminy Cricket prescription, “always let your conscience be your guide.” It is the commitment conspicuously absent in those who dwell in the pathological state Polanyi called “moral inversion” (Yeager 2002-2003).

The acts of judging and deciding that I treat as the *via* term are conscious acts, but they have a dimension that remains tacit. At the moment I judge or decide, I can’t phenomenologically distinguish between the act of judging and the act of deciding. I can distinguish phenomenologically between the prior states and the subsequent states, but not between the acts by which I undergo the changes in state.

In contrast to the *acts* of judging and deciding, I can describe the experiential differences between the *subsequent states*. After I judge, I'm in a new state of belief. After I decide, I'm in a new state of action, or in a new "intentional state" of being committed either to perform or to refuse to perform some action in the future.

### *Leaping a Logical Gap*

Chapter seven of *Thinking, Fast and Slow* is "A Machine for Jumping to Conclusions." It made me question my belief that Polanyi's metaphor of leaping across a logical gap could bring something to the field that Kahneman had not. The reason I decided to include this is that Kahneman attributes jumping to conclusions to System 1 thinking, while Polanyi argues that leaping, or "plunging," across a logical gap is an inescapable moment in scientific work, which is primarily System 2 thinking.

I have said that Polanyi's reliance on Gestalt psychology is one source of a general model for all mental acts. In his last book, written with Harry Prosch, Polanyi said: "Our dwelling in the particulars, the subsidiary clues, results in a synthesis into a focal object only by means of an action of our imagination—a leap of a logical gap" (*M*, 62). This crossing of a logical gap is, according to Yeager (2008, 105) a feature of "every act of commitment, discovery, or assent." Acts of judging and deciding are acts of personal commitment. The image of leaping across a logical gap brings out the risks. What Polanyi wrote about discovery is also true of judging and deciding:

It follows that true discovery is not a strictly logical performance, and accordingly, we may describe the obstacle to be overcome in solving a problem as a 'logical gap,' and speak of the width of the logical gap as the measure of the ingenuity required for solving the problem. 'Illumination' is then the leap by which the logical gap is crossed. It is the plunge by which we gain a foothold at another shore of reality. On such plunges the scientist has to stake bit by bit his entire professional life (*PK*, 123).

This can be a very emotional process:

I have given evidence before of the emotional upheaval which accompanies the mental reorganization necessary for crossing the logical gap that separates a problem from its solution. I have pointed out that the depth of this upheaval corresponds to the force of personal judgment required to supplement the inadequate clues on which a decision is being based (*PK*, 367).

The image of an emotional leap or plunge across a gap is an essential metaphor contained in Polanyi's model of acts of judging and deciding, including those acts when they occur in the Slow thinking process demanded by scientific method.

### **What Kahneman Can Teach Polanyians**

Three things I have learned from Kahneman might be useful to other Polanyians: (1) to treat the distinction between judging and deciding as pragmatic, (2) to try to discover situations in which heuristics and biases cause me to make mistakes, and (3) to make the distinction between Fast and Slow thinking explicit.

## *A Pragmatic Distinction*

A rule that I have been trying to follow is to acknowledge that my distinction between the verbs “to judge” and “to decide” is pragmatic rather than ontological. A pragmatic distinction does not depend on the beliefs that (1) there is an ontological distinction between the faculties of intellect and will, (2) that judging is an act of the intellect, and (3) that deciding is an act of the will. This set of assumptions fails to convince those of us who have rejected their implied image of the human person. A pragmatic distinction between the act of judging and the act of deciding is useful because: (1) it corresponds to the commonsense distinction between believing something is true and actually doing something—“walking the walk,” rather than just “talking the talk,” and (2) it corresponds to a tradition in psychology. As William Goldstein (2002, 37) puts it: “Although the processes of judgment and choice are intricately interwoven, they have been pursued as separate fields of research by largely different groups of psychologists with different intellectual roots, metatheories, goals, and methods.”

Kahneman said of his collaboration with Tversky: “Immediately after completing our review of judgment, we switched our attention to decision making under uncertainty” (*TFS*, 10). In 1974 they published “Judgment Under Uncertainty: Heuristics and Biases” and in 1979, “Prospect Theory: An Analysis of Decision Under Risk.” Instead of trying to distinguish between the “essential natures” of acts of judging and deciding, they were following the consensus among psychologists that there have been two distinct research traditions. “The field” that was celebrated by the publication of *The Blackwell Handbook of Judgment and Decision Making* is an integration of what had been separate fields of research. The work of Kahneman and Tversky, and the later work of Kahneman, has contributed to that integration.

A person who either affirms or denies that there is an ontological distinction between judgment and decision must affirm, at least tacitly, the truth of her *essential definitions*. If she affirms that it’s an ontological distinction, she also affirms that her essential definition of “judgment” differs from her essential definition of “decision.” If she denies that it’s an ontological distinction, she affirms that her essential definition of “decision” is *identical* to her essential definition of “judgment.” Kahneman and Tversky didn’t try to formulate or test essential definitions but were satisfied with *nominal definitions*—the ways the men and women working in the formerly distinct subfields used “judge,” “decide,” and their nominalizations. A nominal definition isn’t an attempt to express the essential nature of the reality to which a word points; it’s just an explanation of how a researcher or writer uses, or intends to use, the word being defined. Baron, for example, is writing about his nominal definitions when he says (2002, 19), “I use the term ‘judgment’ to include decisions, which are judgments about what to do.” Other workers in the field relate the two terms in the opposite way, saying that a judgment is a kind of decision, a decision to believe—or to deny—that something is true or good (Yeager 2008, 97). By treating these as nominal, rather than essential definitions, we avoid useless, probably unresolvable, arguments.

Polanyi seems to have lacked interest in trying to formulate and test essential definitions of judgment and decision. In what I consider to be the definitive essay on Polanyi’s use of the word “judgment.” Yeager says that she had to “extrapolate” from his work: “He does not,” she says (2008, 100), “provide any definitive essay or chapter that explicitly situates his work in relation to this domain of inquiry.” She adds that he “does not even make heavy or frequent use of the terms ‘judgment’ and ‘judging.’” Her careful examination of texts in which Polanyi did use “judge,” “judging,” and “judgment” resulted in her saying that he attributed two distinct meanings to “judgment.” First, “Polanyi is one of those theorists who construe judgment to be

a fundamental power” (2008, 99). She also says of Polanyi that the “act (and art) of personal judgment is, in fact, the core of his distinctive conception of the nature of knowing” (2008, 101). I judge both assertions to be true. They are not, however, assertions about the essential nature of judgment. They are assertions about how Polanyi used the word “judgment.”

What Yeager says about Polanyi’s use of the forms of the verb “to judge,” I say is also true of his use of the forms of “to decide.” All the forms of these verbs are polysemantic. We attribute different, but related meanings to them, depending on the context.

Although Polanyi doesn’t have a definitive essay or chapter on the “nature” of judgment or the “nature” of decision, he does have a section of a chapter entitled “The Nature of Assertions” (*PK*, 27-30). In it, he makes a distinction that I do judge to be ontological. It’s between an asserted and an unasserted declarative sentence. He asserts: “in strict usage the same symbol should never represent the act of sincerely asserting something and the content of what is asserted” (*PK*, 27). He recommends using a “signpost” symbol in front of an asserted sentence, but (pragmatically) doesn’t follow that prescription throughout the rest of *Personal Knowledge*. He does, however, return to this distinction in the chapter that comes closest to being a “definitive” chapter about judgment, Chapter Eight, “The Logic of Affirmation.”

I have circled back from writing about what Kahneman can teach Polanyians to what Polanyians can teach other workers in “the field.” This is because Polanyi’s *essential* distinction between an asserted and unasserted sentence depends on his claim that personal commitment is at the heart of authentic acts of knowing. When I assert a sentence I am personally committed to its truth, even if I know that it might be false. Polanyi said that the purpose of *Personal Knowledge* “is to achieve a frame of mind in which I may hold firmly to what I believe to be true, even though I know that it might conceivably be false” (*PK*, 214). This “state of mind” is a state of personal commitment to all the things that, at a given time, Polanyi had judged to be true.

### *Heightened Awareness of Heuristics and Biases*

Michael Lewis’ title, *The Undoing Project: The Friendship that Changed Our Minds* (2017), is taken from Kahneman and Tversky themselves, who called their work their “undoing project.” By devising experiments that demonstrated how pervasive heuristics and biases are in human judging and deciding, they sought to “undo” the overconfidence most of us have in our ability to judge correctly and decide wisely. It’s important to note that their negative use of “heuristic” as an intellectual shortcut differs from the positive connotation in Polanyi’s notion of “heuristic passion.” From the lists of biases and heuristics, I have selected confirmation bias, bias blind spot, and the representativeness heuristic to write about.

Polanyians might be especially liable to confirmation bias because of the effect upon us of Polanyi’s emphasis on being committed to what we have judged to be true or good, or to acts we have decided to perform or not to perform. Confirmation bias is the tendency to give too much weight to evidence that supports my existing commitments, combined with the tendency to put too little weight on evidence contrary to my commitments. Polanyi’s statement of the purpose of *Personal Knowledge* could be read as an invitation to confirmation bias.

My confirmation bias is augmented by my bias blind spot—an inability to see *my* biases, coupled with a cultivated ability to notice the biases of *others*. Kahneman says that despite his many years of studying these issues, “I have made much more progress in recognizing the errors of others than my own” (2011, 417). In “The Irony Effect: How the Man Who Founded the Science of Mistakes Ended Up Mistaken” (2016),

Daniel Engber reports that some of the experiments Kahneman writes about in *Thinking, Fast and Slow* suffer from the very statistical error Kahneman recognizes in the studies of others—relying on the fallacious “law of small numbers.” This is relying on the results of studies with too small a number of subjects (and perhaps not even a random sample) to make generalizations about the population from which the sample was drawn. However, Engber also reports that some of those studies have now been replicated and show really strong effects.

Recognizing that I am subject to a variety of biases, including a bias blind spot, does not mean that I embrace the Cartesian program of universal doubt. I agree with Polanyi (PK 294-98) that this program is psychologically impossible. Nor does it mean that I reject Polanyi’s fiduciary program, including his emphasis on self-accreditation. For me, it means that I put more emphasis on the ways that the things I believe “might conceivably be false.” Kahneman says that one result of his study of heuristics and biases is that he has improved in his “ability to recognize situations in which errors are likely” (2011, 417). I translate this into a personal prescription: try to become better at recognizing situations in which I am more likely to make bad judgments and decisions.<sup>4</sup>

The representativeness heuristic is illustrated by what Kahneman (2011, 156) calls his and Tversky’s “best-known and most controversial experiment.” It stars a fictitious person they called Linda. Keith Stanovich (2009, 147) points out that there is a huge literature devoted to the “Linda problem,” and provides a lengthy list of references. Kahneman warns us to remember that their description of Linda was written for experiments conducted in the early 1970s:

Linda is thirty-one years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations (Kahneman 2011, 156).

Kahneman and Tversky gave this list to two groups of subjects. They gave the two groups slightly different lists of occupations and asked them to rank them in terms of probability, assigning 1 to the most probable and 7 to the least probable. For Group A, the list was

1. Linda is a teacher in elementary school
2. Linda works in a bookstore and takes yoga classes
3. Linda is active in the feminist movement
4. Linda is a psychiatric social worker
5. Linda is a member of the League of Women Voters
6. Linda is a bank teller
7. Linda is an insurance salesperson

The list given to Group B was identical, except for one item. They replaced “Linda is a bank teller” with “Linda is a bank teller and is active in the feminist movement.” Both groups agreed that Linda is a good fit with “active in the feminist movement” and “works in a bookstore and takes yoga classes” and a bad fit with “bank teller” and “insurance salesperson.” But Group B ranked “bank teller and active in the feminist movement” much higher than Group A ranked “bank teller” (Kahneman 2011, 156-157).

Group B committed a mistaken probability judgment that ought to be obvious but isn’t. “Bank teller” has to be more probable than “bank teller and active in the feminist movement.” There are many more bank tellers than there are bank tellers who are active feminists, and every *feminist* bank teller is also in the larger

category of bank teller. Kahneman and Tversky then modified the experiment so that they asked just one group of subjects to engage in ranking the items on a list in which the first six items were the same as the six non-crucial items in the first list. Number seven was “bank teller” and number eight was “bank teller and active in the feminist movement.” They thought that this organization of the list would make most respondents see that the larger category “bank teller” would include the smaller category. But 89% of the Stanford undergraduates in their sample ranked the smaller set, “bank teller and active in the feminist movement,” as more probable than “bank teller.” They then used a sample of doctoral students in the “decision-science” program in the Stanford Graduate School of Business. All had taken graduate-level courses in statistics, but 85% of this sample thought that it would be more likely that Linda would be in the smaller set than in the larger set.

They engaged in what Kahneman calls “increasingly desperate” attempts to eliminate the mistake of judging the less probable as more probable. They conducted a series of experiments in which they eliminated all options but the crucial pair. After describing Linda, they asked which alternative is more probable: Linda is a bank teller, or Linda is a bank teller and active in the feminist movement.

They sampled students in several universities, and at each one 85% to 90% of the answers were that the Linda was more likely to be a *feminist* bank teller than just a bank teller. They presented the problem to the naturalist Stephen Jay Gould, who, despite knowing the correct answer, struggled with it. He wrote: “a little homunculus in my head continues to jump up and down, shouting at me—’but she can’t be just a bank teller: read the description’” (Kahneman 2011, 158-159).

This “representativeness heuristic” is operative even in the thinking of statistically trained students and even in successful scientists. We bypass what should be a relatively easy estimation of relative probabilities in favor of a good story. Linda just “looks like” a person who, if she were a bank teller, would also be a bank teller who was active in the feminist movement.

### *Dual Processing*

In *Thinking, Fast and Slow*, Kahneman not only reviews his collaborative work with Tversky, but also organizes the book around the distinction between Fast, “System 1,” and Slow, “System 2,” thinking. This is his way of bringing in the “dual processing” tradition of research. Stanovich (2009, 215, note 3) says that the distinction between Fast and Slow thinking was only implicit in Kahneman’s collaborative work with Tversky:

Evidence from cognitive neuroscience and cognitive psychology is converging on the conclusion that the functioning of the brain can be characterized by two different types of cognition having somewhat different functions and different strengths and weaknesses. That there is a wide variety of evidence converging on this conclusion is indicated by the fact that theorists in a diverse set of specialty areas (including cognitive psychology, social psychology, cognitive neuroscience and decision theory) have proposed that there are both Type 1 and Type 2 processes in the brain (Stanovich 2009, 21-22).

When I'm engaged in Fast thinking, I'm much more likely to allow biases to affect my judging and deciding, and much more likely to take the mental shortcuts Kahneman and Tversky call "heuristics." When I'm thinking more slowly, I'm more likely to be aware that there are heuristics and biases lurking in my tacit dimension, even though it's hard for me to bring them to focal awareness.

Stanovich (2009, 22) provides a useful list of contrasts between "Type 1" and "Type 2" processing. Type 1 processes

1. Are fast
2. Are mandatory when the triggering stimuli are encountered
3. Do not require conscious attention
4. Do not depend on high-level control systems
5. Can operate in parallel—more than one can be going on simultaneously

Type 1 processing is the "default" mode of cognitive processing. The characteristics of Type 2 processing are the opposites of each of the five characteristics of Type 1. Not only is it slower and dependent on conscious attention, it actually requires more physical energy (Kahneman 2011, 41-44).

Polanyi didn't distinguish between Type 1 and Type 2 processing, but, because of his emphasis on scientific thinking, he focused on what Kahneman would call "System 2" thinking. The frame of mind he described as the objective of his writing *Personal Knowledge* is a Type 2 frame of mind, and the self-accreditation by which a person achieves this frame of mind is a Type 2 process. What the experiments of Kahneman, Tversky and their successors in the field of judgment and decision making emphasize is the importance of that qualifying phrase in Polanyi's description of his idealized frame of mind: "I know that it might conceivably be false."

The distinction between Fast and Slow thinking is only analogous to the distinction between common sense and science. Much of our commonsense thinking is Fast thinking. As Kahneman says, "System 1 is indeed the origin of much that we do wrong, but it is also the origin of much that we do right—which is most of what we do." Fast thinking is necessary to our skillful navigation through the many different situations in which each of us has learned to live. System 1 draws on "the rich and detailed model of our world that is maintained in associative memory." Kahneman calls this a "marvel" of System 1 (2011, 416.)

## Conclusion

I have modified Baron's assertion that normative, descriptive, and prescriptive modes of judging and deciding are interrelated. I say that workers in the field of judgment and decision making will have a model of judging (how people "make judgments") and a model of deciding (how people "make decisions"), and that that these models will have descriptive, normative, and prescriptive dimensions. Personal commitment is the most important thing Polanyians can add to the models of judging and deciding *from* which workers in the field attend *to* the acts of judging and deciding performed by people in different social positions. Polanyi taught that acts of judging and deciding are *acts* of personal commitment that result in personal *states* of commitment. When I judge, I commit myself to either affirming or denying the truth or goodness of something. When I decide, I commit myself to either doing or not doing something. The widespread failure of workers in the field to include personal commitment in their models of judging and deciding is a

serious weakness. By saying this, I am criticizing their descriptions and explanations of these acts, as well as the normative and prescriptive dimensions of their models.

I consider the distinction between Fast and Slow thinking to be the most important addition to *my* Polanyian models of judging and deciding. I emphasize that these are my models because I know that there are disagreements among Polanyians. The distinction between System 1 and System 2 has been made only after Polanyi's death, so it can't be incorporated into *his* models of judging and deciding. This distinction adds to the normative, descriptive, and prescriptive dimensions of my models. Descriptively, it is the case that most of a socially competent person's behavior results from the work of System 1. But it's also the case that most of a person's mistaken judgments and bad decisions result from the operation of System 1. The normative dimension is embedded in those descriptive assertions. It determines what I mean by "socially competent," "mistaken judgments," and "bad decisions." Another descriptive assertion in the model is that most of my definitions of how I ought to behave in different situations are tacit. I'm not consciously aware of them as objects of focal attention. As Kahneman points out, it's impossible to discover and correct most of the heuristics and biases that result in mistaken judgments and bad decisions. What it is possible to do is to learn which kinds of situations are the ones in which I have been most likely to have made these mistakes. This, then, is the main prescriptive dimension of this addition to my model. And it clearly is a prescription to engage in System 2 thinking.

Finally, I think that Kahneman's appreciation of Gestalt psychology made his thinking and writing about judgment and decision more like Polanyi's than would have been the case if that, like so many scientists, he had "run away from the philosophical implications of Gestalt" (*PK*, vii). But his failure to include personal commitment in his model of judging or his model of deciding is a big difference. Kahneman, Tversky, and many of the contributors to the Blackwell Handbook have not fully rejected the normative ideal of scientific detachment that was the object of Polanyi's "undoing project."

## ENDNOTES

<sup>1</sup>An earlier version of this paper was presented at the Polanyi Society Meeting in Nashotah, Wisconsin, June 2018.

<sup>2</sup>Had Tversky still been alive, he surely would have shared the Nobel Prize with Kahneman, but in this essay I focus on what Kahneman wrote about judging and deciding in *Thinking, Fast and Slow* (2011), published 15 years after Tversky's death in 1996. Hereinafter *TFS*.

<sup>3</sup>In a personal communication, Phil Mullins suggested that Polanyi might have written this as a response to accusations that the "fiduciary program" of *Personal Knowledge* was too "fideist."

<sup>4</sup>This strikes me as similar to a rule I learned as a child in my earliest religious instruction classes: avoid the occasions of sin.

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