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**The Space Between Choice and Our Models of It:  
Practical Wisdom and Normative Economics**

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**Abstract\***: The gap between the economic theory of action and the practical reality of choice (analyzed in the Aristotelian practical wisdom tradition) cannot be bridged through the development of more complex models. This poses a challenge for the use of economic models for policy analysis: they cannot help but leave out of their formal analysis aspects of actual decision making (practical wisdom) which are crucial to the operation of the economy. Insights from three different treatments of the gap between the formal analysis of choice and the reality of human behavior (Suchman's studies of human-machine interaction, Scott's analysis of *mētis*, and Vernon Smith's studies of ecological rationality) offer guidance for how economists might modify the insights of their models of choice when offering policy advice.

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\* Many thanks to those colleagues who have suggested the works from very different fields which are the material for this chapter: Dan Morrison, who lent me Lucy Suchman's book after a conversation at the division copier, and Chris Udry and Joel Fetzer, who strongly recommended James Scott's work. None of these knew the connections I would try to draw between these works and economics, so they cannot be blamed for any unwarranted connections or misreadings I may have perpetrated here.

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Two men in a hot-air balloon have lost their bearings in a cloud bank. The mist clears long enough for the men to see another man on the ground. They ask him where they are, and he tells them “you’re up in the air,” whereupon one of the balloonists says to the other, “that man must be an economist. What he told us is undeniably true but utterly useless.”

The economic account of rational choice confirms the punchline to this joke: it rings true, but is not particularly helpful as advice for making a decision. The rational choice model in its simplest form is an optimization problem:

$$(1) \quad \max_X U(X)$$
$$s. t. \quad p'X \leq Y$$

Where  $U(.)$  is a single-valued objective (utility) function,  $X$  is a vector of goods,  $p$  is a vector of prices, and  $Y$  is income. We may complicate this model by adding uncertainty, resource endowments, multiple time periods, and strategic considerations, of course, but it will remain an optimization exercise.

The outline of rational choice is straightforward and plausible: specify your objectives, know your constraints, estimate probability distributions for things you do not know for certain, and choose the best feasible bundle. Nevertheless, it is not sufficient to make an *actual* decision; it is not *practical*. Rational choice does not help us to discover what our objectives should be, or what is feasible in a given circumstance, and the risks we face. Even the behavioral economist’s account’s seemingly more realistic emphasis on rules of thumb, which may describe some observed behaviors more accurately, does not help one to make an actual decision—to choose which rule of thumb to use, or when to abandon a well-worn rule and experiment with another.

There is a ‘space between’ the economic account of decision making and what it is like to make an actual decision. This essay is about the existence of this ‘space between’, about what

fills it (the virtue of practical wisdom), and about the implications of this ‘space’ for normative economics. Section one argues for the relevance of the question “are there aspects of actual decision making which *cannot* be incorporated into the economist’s optimizing framework?” Section two introduces ‘practical wisdom’ as an account of what fills the ‘space between’. In practical wisdom, the Aristotelian tradition offers a self-consciously comprehensive account of decision making which highlights aspects of actual choice which are beyond the reach of the economic model. The unformulability of practical wisdom poses a challenge for normative economics: if practical wisdom is crucial to actual decisions but invisible to economic models, how should economists think about their models when giving policy advice? To get insight into this challenge, section three looks to three different social science research programs which explore the shortcomings of formal accounts of choice and the implications of those shortcomings for the practical usefulness of formal method. Section four summarizes what these examples mean for economists seeking to take practical wisdom seriously even though they cannot explicitly model it in an optimizing framework.

## **1 How the ‘Space Between’ Matters: The Normative Uses of Positive Models**

The first question about the space between the economic model of choice and actual choice is whether what fills it can be incorporated into the economic account without radically altering the economic account. To jump from a generally specified optimization model (equation 1) to an actual decision, does the decision maker simply insert his objective function, prices, and income (say,  $U(X) = x_1^4 x_2^5$ ,  $p_1 = 4$ ,  $p_2 = 6$ ,  $Y = 100$ )? Is the actual decision simply a specific instance of the general optimization problem? Or is the actual decision something more, even

something radically different—the exercise of a non-technical kind of reason whose logic is not captured by the optimization of single-valued objective functions?

I will argue that there is something more to decision making than optimization, something that cannot be captured by more complex models. The non-optimization aspects of decision making may matter for positive analysis (might result in better predictive models), but that is not my concern here. I am content to entrust any potential positive improvements to the many ambitious economists who devote themselves to positive economics. Whatever the positive implications of the ‘space between’, its nature has important normative implications.

To see the normative importance of the ‘space between’, imagine that actual decisions are nothing more than specific instances of the general model specified in equation 1 above. In this case, the transition from positive to normative analysis will be a transition from one sort of optimization problem (equation 1) to another sort of optimization problem (the satisfaction of multiple objective functions subject to aggregate constraints). In this case both positive and normative analyses will be technical. Moreover, in both accounts the individual’s objective function will have primary normative weight. However one frames the policymaker’s problem—as the assignment of individual utility weights in a social welfare function, or as a search for Pareto optimal allocations—the existence of utility functions is foundational.

This transition from technically-conceived positive problem to technically-conceived normative problem is smooth if the only thing needed to make the economic account practical is knowledge of individual utility functions and of resource constraints. However, if the ‘space between’ is filled with something more than the specific details of equation 1, then normative analysis will require more than information about individual utilities, and the social welfare functions and Pareto criteria that utility makes possible. Normative analysis will require a deeper

understanding of the ‘space between’. The non-calculative skills, judgments, and habits which fill the ‘space’—their generation and maintenance, their function in the operations of markets and society, and their contribution to wellbeing—will be normatively important.

Although economists suspect that all non-optimizing accounts of choice lack rigor and consistency, there are in fact established traditions of careful philosophical and social science reflection on the meaning and implication of practical decision making and action. These disciplines highlight what is systematically absent from economic accounts, and the normative implications of these gaps. The next section will introduce the Aristotelian practical wisdom tradition, which offers a careful account of what is left out of the economic model, and the relationship between formal accounts of action and actual decisions. Section three will examine three examples of social scientific research on the practical implications of the ‘space between’ for theory and practice.

Practical wisdom is the virtue by which people act well in the world. It is precisely those aspects of choice which are simultaneously difficult to formalize and crucial to actual decision making which constitute practical wisdom. Economists should be interested in the practical wisdom tradition for two interrelated reasons. First, practical wisdom describes crucial aspects of choice which can never be modelled, and thus defines definite limits to the modelling enterprise. The invisibility of practical wisdom to economic accounts of choice suggests a second reason why economists should be interested in practical wisdom: because practical wisdom is crucial to decision making, its generation and preservation is an important policy concern. Its existence thus provides a challenge to economists who wish to offer good policy advice: how do you take into account something as important as practical wisdom in your policy advice when you cannot hope to model it fully?

The next section will briefly outline the account of practical wisdom, argue for its usefulness as an account of what lies in the ‘space between’, and detail those aspects of practical wisdom which cannot be modelled in an economic (optimizing) framework.

## **2 Practical Wisdom Fills the ‘Space Between’**

Economists are quick to acknowledge that their models are approximations of actual decision making, but nowhere do they offer a full account of decision making against which the approximation could be gauged.<sup>1</sup> Comprehensive accounts of choice are, however, available. The Aristotelian tradition in moral philosophy beginning with Aristotle’s *Nicomachean Ethics*,<sup>2</sup> interpreted through Aquinas and his modern interpreters<sup>3</sup> offers just such a comprehensive account of choice.<sup>4</sup> Aristotle’s account of ‘practical wisdom’, “a reasoned and true state of capacity to act with regard to human good,”<sup>5</sup> is an account of decision making which attempts to be comprehensive, leaving no aspect of choice out of its account by method, and which builds into its account a recognition that there are aspects of practical wisdom which cannot be fully formulated.<sup>6</sup> Given the ambition of its vision—to give a full account of what it is like to for a person to decide on a course of action—the Aristotelian tradition offers an account of what economists leave out when they simplify.

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<sup>1</sup> See Andrew Yuengert, *Approximating Prudence: Aristotelian Practical Wisdom and Economic Models of Choice*, pp. 11-14.

<sup>2</sup> Aristotle, “Nicomachean Ethics,” in *The Basic Works of Aristotle*.

<sup>3</sup> Thomas Aquinas, *Summa Theologica*; John Finnis, *Natural Law and Natural Rights*; Kevin Flannery, *Acts amid Precepts: The Aristotelian Logical Structure of Thomas Aquinas’s Moral Theory*; John Bowlin, *Contingency and Fortune in Aquinas’s Ethics*; Eleonore Stump, *Aquinas: Arguments of the Philosophers*.

<sup>4</sup> Although this paper makes use of the Aristotelian account of practical reason, it is conceivable that economists could draw on Kantian or Humean alternatives for this exercise. For more on these alternatives, see Mark D. White, *Kantian Ethics and Economics: Autonomy, Dignity, and Character*, and Robert Audi, *Practical Reasoning and Ethical Decision*.

<sup>5</sup> Aristotle, “Ethics,” 6.5.

<sup>6</sup> *Ibid.*, 1.3.

The unbridgeable differences between practical wisdom and rational choice originate in the radically different environments in which practical wisdom must operate. The first and most important characteristic of that environment is its ‘contingency’.<sup>7</sup> In the complex, uncertain world of Aristotelian ‘contingency’, no two sets of circumstances are identical, and a small change in circumstance may result in disastrous consequences from the same action. In such a world, there is little data from which to construct probability distributions; to group circumstances together into something like a statistical sample, one must overlook differences in material, social, and personal circumstances which may be crucially important.<sup>8</sup>

The contingency of circumstance cannot be circumvented by the collection of data and the construction of probability distributions; most decisions must grapple with contingency directly. Irreducible contingency touches on every aspect of decision making, including the nature of the objectives of action. When economists assume a single-valued utility function  $U(X)$ , they ignore the process by which agents reason about and discover what is good in a contingent environment. Although ‘ultimate goods’ (life, health, friendship, truth, justice, beauty, freedom)<sup>9</sup> are obviously and certainly good, they are not chosen directly. Instead, people choose goods ( $X$ s) which are desired only as instrumental means to the ultimate goods.<sup>10</sup> The relationship between instrumental goods and the ultimate goods they promote is not obvious in a contingent environment, and must be discerned in each situation.<sup>11</sup> As a result, the acting person cannot consult a pre-existing utility function. His objectives develop as he acts, as he moves towards (or away from) his own fulfillment and happiness. The sorts of skills and habits which aid this process of discovery are not calculative.

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<sup>7</sup> Contingency is similar to Knightian ‘uncertainty’. See Frank Knight, *Risk, Uncertainty, and Profit*.

<sup>8</sup> Yuengert, *Approximating Prudence*, pp. 70-77.

<sup>9</sup> See Finnis, *Natural Law*, pp. 85-90 for discussion of the challenge of drawing up a complete list of ultimate goods.

<sup>10</sup> Aristotle, “Ethics,” 1.1.

<sup>11</sup> Yuengert, *Approximating Prudence*, pp. 56-57.

A third aspect of the environment within which decisions must be made is the existence of internal conflicts which require the development of virtue (or habit). Contingency is found in internal as well as external matters;<sup>12</sup> differences in character must be taken into account when making a decision. A person may reason that a particular course of action is good but be unable to pursue it due to an inability to postpone gratification or resist fear. Most people are not helpless in the face of these internal conflicts, but may develop habits or other strategies for self-management. This internal dimension complicates already complex decisions, and makes observed choices an imperfect guide to individual welfare.<sup>13</sup>

A fourth aspect of the environment in which practical wisdom must operate is its intensely personal nature.<sup>14</sup> The economic model is abstract and impersonal; if decisions were simply a matter of specifying a particular version of equation 1, then any person who understands calculus could make a decision for any other person. To the person making the decision, however, there is more at stake than abstract utils. No one makes a decision *in general*; she makes a decision about her own life and flourishing. Likewise, individuals care little about abstracted probability distributions over the outcomes of choice, but care instead about the realization they will experience. There is every incentive to change the odds, to discern the risks, and avoid the worst outcomes.

These four aspects of the decision making environment (its contingency, the nature of objectives, the need for virtues, and the personal nature of action) make it impossible to treat the objectives of action and the choice set as if they were unproblematically given, as if the only decision skill were calculus. The skills needed to decide in this environment are perceptual, not calculative; they embody the need to perceive the barest hints of possibility for action in complex

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<sup>12</sup> Bowlin, *Contingency and Fortune*, p. 37.

<sup>13</sup> Yuengert, *Approximating Prudence*, pp. 116-119.

<sup>14</sup> *Ibid.*, pp. 126-127.



environments, to manage the external challenges of contingency and the internal challenges of developing and maintaining character. Aquinas, in a detailed outline of the virtues needed to make good decisions, lists non-calculative virtues like *memory* (which allows us to draw on past experience), *docility* (receptiveness to advice from those who have more experience), *understanding* (the knack for discerning the possibilities for action when they are not obvious), *foresight*, *circumspection*, and *constancy* (the ability to stick to a decision once it is made).<sup>15</sup>

These aspects of the decision environment and the virtues that decision making requires in this environment together explain the unformulability of practical wisdom. If the exercise of decision making were identical to optimization subject to constraints, then all knowledge of decision making could be contained in manuals and formulas, and skill in decision making would be nothing more than knowledge of how to formulate and solve constrained optimization problems. But practical wisdom is not formulable; it is passed from person to person, not as one passes a book of instructions from hand to hand, but as one learns a craft, a way of life, through imitation and apprenticeship.<sup>16</sup>

There is a partial overlap between practical wisdom and rational choice: their shared means-ends structure. When a person reflects *ex ante* on the stakes of a decision to be made, or looks back *ex post* on the advisability of an action already taken, she will call to mind the purposes and goals of the action, and the suitability of the means employed. This sort of reflection, and the means-end structure of to which practical reflection gives rise, is itself a part of mature practical wisdom, which develops with experience.<sup>17</sup> We orient ourselves through means-ends reasoning.

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<sup>15</sup> Aquinas, *Summa*, II-II, 49-54. Also see Stump, *Aquinas*, ch. 9.

<sup>16</sup> Yuengert, *Approximating Prudence*, pp. 144-146.

<sup>17</sup> Flannery, *Acts Amid Precepts*, p. 49; see also Alasdair MacIntyre, *After Virtue*, ch. 15.

Nevertheless, a practically wise person is much more than a means-ends optimizer. Filling in the means-ends outline requires a kind of reasoned judgment which brings into play experience and a wide range of non-calculative habits of perception and self-management. Neither is a practically wise person a mere deliberative plodder, specifying a set of ends and grinding away along well-worn decision paths. Practical wisdom most often operates as an ability to perceive options and act quickly (even subconsciously), in ways which do not always follow the plans we ascribe to it before or after we observe its operations.

Neither the contingent environment nor the aspects of practical wisdom which are fitted to that environment can be captured in an economic optimization model. These are not simply phenomena which *do not happen to be* captured by the economic model of choice; they *cannot be* captured by the logic of optimization subject to constraints. If we accept that the ‘space between’ economic models of choice and human behavior must always exist, and is filled with a crucial human virtue, how then should we view the economic model? As I said at the beginning of this paper, researchers attempting to overcome the limitations of the optimization framework may generate improved positive models. I am content to allow leave potential improvements to the many positive economists, and instead wish to raise neglected questions about the normative uses of economic models in light of their inescapable shortcomings.

What kind of normative framework do necessarily incomplete economic models of choice offer us? Should the existence of practical wisdom, incapable of being captured by formal economic method but nonetheless crucial to decision making, affect the advice economists offer about the economy? To answer these questions, the next section discusses three separate areas of inquiry (only one of which is purely economic) in which the inability of formal accounts to describe actual decision making affects the uses of formal methods.

### 3 Normative Insights from Three Sources

The Aristotelian tradition is not alone in its recognition that there are activities and kinds of knowledge which resist formalization, but which are nonetheless crucial to healthy social interaction and social order. This section discusses three different analyses of the relationship between formal accounts of action and the reality of action, and reflections on the usefulness of formal accounts in light of this relationship. The three examples are

- 1) Lucy Suchman's analysis of machine-human interaction.<sup>18</sup>
- 2) James Scott's analysis of the failures of "high modernist" social planning to account for informal skills and modes of intelligence on which successful social order depend.<sup>19</sup>
- 3) Vernon Smith's analysis of the relationship between constructivist and ecological rationality, building on the analysis of Friedrich Hayek.<sup>20</sup>

Each example offers answers to four questions relevant to our inquiry into practical wisdom:

- 1) What is the formal approach to decisions?
- 2) What is the informal reality?
- 3) How are the formal description and informal reality related?
- 4) How should we think about the practical application of the formal approach in light of its relationship to the informal reality?

#### 3.1 Plans and Situated Actions

In *Human-Machine Reconfigurations*, Lucy Suchman reports on research into the difficulty of designing interactive interfaces for copy machines.<sup>21</sup> Her research, begun in the 1980s, locates the difficulty in the gap between the theory of action and communication which informs machine programming and the behavior of human beings trying to make copies.

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<sup>18</sup> Lucy A. Suchman, *Human-Machine Reconfigurations: Plans and Situated Actions*, 2<sup>nd</sup> ed.

<sup>19</sup> James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*.

<sup>20</sup> Vernon L. Smith, *Rationality in Economics: Constructivist and Ecological Forms*; Friedrich A Hayek, *The Constitution of Liberty; Law, Legislation, and Liberty*, vol. 1: *Rules and Order; The Fatal Conceit*.

<sup>21</sup> Suchman, *Human-Machine Reconfigurations*, pp. 8-12.

Suchman organizes her analysis around “two alternative views of action.”<sup>22</sup> The view which informed early attempts to program computer-user interfaces for copier machines “locates the organization and significance of human action in underlying plans.”<sup>23</sup> Suchman defines a ‘plan’ as “a sequence of actions designed to accomplish some preconceived end.”<sup>24</sup> To specify a plan is to identify a current state, a desired end state, and the path from one to the other. Although the goals of plans are more general than the preference maximization favored by economists (a plan will get you to a specified goal, without asking whether or not it is optimal), the formal structures of plans and optimization are similar: specify ends and the means to achieve them. In both cases, all action is described as a form of problem-solving; on this account, action is inconceivable without a plan.

Within this framework, a “smart copier” utilizes a carefully designed plan for communicating with human users, who are also assumed to act according to carefully pre-specified plans when they make copies. The problem with this approach is that human action is not captured cleanly by plans, but is instead ‘situated’:

The coherence of situated action is tied in essential ways ... to local interactions contingent on the actor’s particular circumstances.... A consequence of actions’ situated nature is that communication must incorporate both a sensitivity to local circumstances and resources for the remedy of troubles in understanding that inevitably arise.<sup>25</sup>

Plans are abstract representations of situated action; they simplify both of the goals to be achieved and the contingency of circumstances within which action occurs. As such, plans are always ‘vague’. Situated action must take into account the contingencies of place, of social context, and of the actor’s understanding and misunderstanding of her situation. On this account

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<sup>22</sup> Ibid., p. 51.

<sup>23</sup> Ibid., p. 51.

<sup>24</sup> Ibid., p. 52.

<sup>25</sup> Ibid., pp. 51-52.

all action is situated. Human beings adjust to their particular environments, and collaborate with others in those environments, to construct an intelligible course of action. The intelligibility of action is not just dependent on the material environment; it is a mutual, co-produced intelligibility between the situated actors. Crucial to this construction is the ability to detect and repair mistakes in understanding and communication.

Suchman traces the observed failures of copy machine user interfaces to the inability of machine plans to fully describe the situated actions of users. The background knowledge needed to fully interpret the intentions of users can never be fully coded into a plan. Moreover, the full range of human communicative resources (gestures, pauses, expressions) is not available to machines. As a result, "... there is a profound and persisting asymmetry between people and machines, due to a disparity in their relative access to the moment-by-moment contingencies that constitute the conditions of shared interaction."<sup>26</sup>

The 'situated action' described by Suchman requires more than a plan can deliver: an ability to wade into highly contingent circumstances—circumstances which include the actions and intentions of other actors. The situated actor *feels* her way into a situation, discovering what ends are possible, what means are available, and even what counts as means and ends. Resources for correcting misunderstandings and learning from those misunderstandings are crucial. Situated action bears a strong resemblance to practical wisdom in its need to make sense of material and social contingency.

In the same way that practical wisdom has a means-ends logic, and thus resembles the optimizing models of economists, Suchman notes that when human beings reflect on their situated actions, they often invoke the means-ends structure of plans. However, in contrast to an account in which plans are prior to situated actions—in which action merely fills in the gaps left

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<sup>26</sup> Ibid., pp. 182-183.

in a purposefully vague general plan—Suchman asserts that plans are a product of situated action. Plans are *one* of the ways that we make sense of our circumstances, but plans do not determine action, because they are abstractions from background knowledge of material and social context.<sup>27</sup> For example, a person organizing her thoughts about a decision will often invoke a plan, and someone who reflects back on a decision will often structure his reflection within the framework of a plan:

... plans are efficient formulations of situated actions. By abstracting uniformities across situations, plans allow us to bring past experience and projected outcomes to bear on our present actions. As efficient formulations, however, the significance of plans turns on their relation back to the unique circumstances and unarticulated practices of situated activities.<sup>28</sup>

Because Suchman's distinction between plans and situated action is similar to the distinction between economic accounts of decision making and practical wisdom, the practical advice for machine programming which results from her analysis is highly relevant to the central question of this essay: how should economists think about the normative implications of their models in light of the gulf between optimizing models of behavior and actual behavior governed by practical wisdom?

Although the plans of programmers cannot replicate the contingency-respecting processes of situated action, programmers can respect and take advantage of situated action. Instead of discarding plans altogether, they must “understand what kind of resource they [plans] are.”<sup>29</sup> Accordingly, programmers in the fields of Computer Assisted Cooperative Work and Participatory Design have begun to structure their approach around the orienting function of plans in human decision making—as a way to organize situated action, to give it room to

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<sup>27</sup> Ibid., p. 52.

<sup>28</sup> Ibid., p. 184.

<sup>29</sup> Ibid., p. 183.

evolve.<sup>30</sup> The programmer provides a framework within which the means, ends, and practices of the community of users can develop, not substituting his own fully formed purposes, but allowing them to emerge from situated actions which he cannot fully describe but whose purpose and fruitfulness he want to promote. This changes the role of the designer from the one who anticipates and plans the interaction with the machine (the all-seeing expert) to the one who puts into place a programming structure which takes full advantage of situated action: “the object of design must shift. Rather than fixed objects that prescribe their use, artifacts ... comprise a medium or starting place elaborated in use.”<sup>31</sup>

Suchman’s description of the relationship of formal descriptions of action (plans) to action itself (situated action) parallels the relationship between the economic account of choice and the choices people actually make. The economic account is intelligible in the means-ends framework of optimization, but that framework is insufficient for decision making, and may be a reflection of decision making, not a necessary precursor. Just as Suchman’s programmers must respect the reality of situated action when designing computer systems, in their normative advice economists ought to respect the operation of practical wisdom, even though they cannot explicitly incorporate it into an optimization model.

### ***3.2 Seeing Like a State***

In *Seeing Like a State*, James Scott investigates the failures of certain plans of social reform, locating their failures in the planners’ blindness to the existence of local and personal information, judgments, and actions which are necessary to social order.<sup>32</sup> State plans of reform must rely on schematic representations of society, and whatever does not fit the simplified

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<sup>30</sup> Ibid., pp. 277-278.

<sup>31</sup> Ibid., p. 278.

<sup>32</sup> Scott, *Seeing Like a State*, pp. 6-7.

description is often invisible to the planner. Because Scott's analysis is practical—is intended to inform policy—it offers an informative look at the normative shortcomings of abstract models, and of how one might use models in spite of their shortcomings.

Scott contrasts two kinds of knowledge: 'authoritarian high modernism' and '*mētis*'. Authoritarian high modernism is the attempt to rationalize society through the systematic application of scientific and technocratic methods: "High modernism is ... a particularly sweeping version of how the benefits of technical and scientific progress might be applied—usually through the state—in every field of human activity."<sup>33</sup> The improvement of society, undertaken by the state, requires a high degree of simplification. 'Society' must be defined as something capable of improvement. The planner must abstract away from certain aspects of human behavior and well-being in order to focus on those aspects which are the focus of government regulation and control.<sup>34</sup> Among the details left out when planners simplify are variations in material and social characteristics which are important challenges and resources at the local level, but which cannot be viewed in detail through the synoptic lens of the planner's model. Scott argues that the past successes of technology and science breed an overconfident reliance on abstract plans, increasing the planner's disregard for local contingencies, since they have apparently been unimportant in the past.<sup>35</sup>

Scott documents the failures of several large scale plans which ignored the local knowledge and practices which were necessary to the success of the plan. This local knowledge he calls *mētis*, which "represents a wide array of practical skills and acquired intelligence in responding to a constantly changing natural and human environment."<sup>36</sup> *Mētis* is similar to

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<sup>33</sup> Ibid., pp. 89-90.

<sup>34</sup> Ibid., p. 87.

<sup>35</sup> Ibid., p. 95.

<sup>36</sup> Ibid., p. 313.



practical wisdom, although it is typically expressed in activities of smaller scope than practical wisdom's (which is life-as-a-whole). Like practical wisdom, *mētis* arises to manage irreducible contingency in environments where the personal stakes of action are high.<sup>37</sup> It emerges through experience reflected on and expressed within a community of practice, and is unarticulated and embedded in character. *Mētis* develops through the experience of repeated actions conducted in similar but not identical settings. It adjusts to differences in environment which are difficult to articulate but crucial to performance. *Mētis* is made necessary by just those contingencies which are invisible to state planners. Scott also notes that *mētis* arises in those situations which are least abstract: when the personal stakes are high (the starvation of one's family, fatal injury or financial ruin), and abstract analysis is less relevant and more risky.<sup>38</sup>

Like Suchman, Scott emphasizes the dependence of formal plans on informal practice, although plans and *mētis* are not as closely connected as Suchman's plans and situated action. Because planners are not involved in the local practices of *mētis*, their plans are abstract representations of the problem as planners (not locals) perceive it. This creates a greater disconnect between the Scott's planners and *mētis* than exists between Suchman's plans and situated action. Nevertheless, Scott emphasizes that plans are dependent on the exercise of *mētis* for their practical success, even though planners often ignore *mētis*, or even consider it a sort of unruly resistance to the plan: "Formal order ... is always and to some considerable degree parasitic on informal processes, which the formal scheme does not recognize, without which it could not exist."<sup>39</sup>

Scott does not denigrate all planning; neither does he praise all *mētis*. Plans can bring about great social improvement, and *mētis* can be embedded in and perpetuate local oppression.

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<sup>37</sup> Ibid., pp. 313-319.

<sup>38</sup> Ibid., p. 318.

<sup>39</sup> Ibid., p. 310.

He is most critical of plans which operate as if *mētis* does not exist or is not relevant. Scott locates the failure of large-scale plans of social reform in their failure to recognize the operation of *mētis*, and its necessity to the plan's success.<sup>40</sup> Plans which do not recognize the operation of *mētis* often inadvertently disrupt its operation, through the dislocation of populations and the imposition of rationalized methods which displace sometimes superior local knowledge.

In light of Scott's analysis, how should planners view the project of social reform, and the place of technical plans in that project? Scott asserts that the abstraction of planners is "not a problem once it is seen to be incomplete."<sup>41</sup> What are the consequences of this incompleteness for wise planning? Scott offers several pieces of advice for how plans should incorporate respect for *mētis*. First, plans should favor small reversible steps; since planners can observe neither the operation of *mētis* nor the contingencies which make *mētis* necessary, they should be ready for the unexpected, and not put too much weight on the goals of the plan. Second, planners should plan for surprises, and allow space for human inventiveness (*mētis*) to meet and overcome challenges in unpredictable ways.<sup>42</sup> Although plans abstract away from contingency, communities still must grapple with contingency, and the resources for dealing with it exist among the communities subject to the plan. Third, to better meet the challenges of contingency, planners should consider institutions which are "multifunctional, plastic, diverse, and adaptable," even if it is not clear what purposes these characteristics serve in the plan.<sup>43</sup> Just as computer programmers design software that is flexible enough to develop in unexpected ways when it meets the unpredictable complexities of the user, planners ought to design plans which can take advantage of *mētis*.

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<sup>40</sup> Ibid., p. 340.

<sup>41</sup> Ibid., p. 346.

<sup>42</sup> Ibid., p. 344.

<sup>43</sup> Ibid., p. 353.

Scott offers an additional caveat to planners: authoritarian high modernism can undermine *mētis*: “high modernist designs for life and production tend to diminish the skills, agility, initiative, and morale of their intended beneficiaries.”<sup>44</sup> Because *mētis* cannot be incorporated explicitly in a plan, it appears to serve no purpose, but its loss may undermine the plan, and impoverish the community, whose purposes and goals are not simply the goals and purposes of the plan. Planners ought to value *mētis* for its own sake, and regard its diminishment as a loss.

### ***3.3 Constructivist and Ecological Rationality***

In *Rationality in Economics*, Vernon Smith reflects on the field of experimental economics, and its connections to Friedrich von Hayek’s work on planned versus spontaneous social order.<sup>45</sup> In his case against planned economies, Hayek contrasted two kinds of rationality: constructivist and evolutionary/ecological.<sup>46</sup> Constructivist rationality is calculative and optimizing. Smith defines it as “the deliberate use of reason to analyze and prescribe actions judged to be better than alternative feasible actions that might be chosen.”<sup>47</sup> According to Hayek, by assuming that agents have full information about their preferences and options, economists give the impression that this information can be known prior to the evolutionary market interactions without which the information will not be revealed.<sup>48</sup> This gives rise to the impression that society can be planned, and that planners “should redesign society and its

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<sup>44</sup> Ibid., p. 349.

<sup>45</sup> Smith, *Rationality*, pp. 1-10.

<sup>46</sup> Hayek used the term ‘evolutionary rationalism’; see Hayek, *Law, Legislation, and Liberty*, pp. 29-30. Smith used the term ‘ecological rationality’; see Smith, *Rationality*, p. 36.

<sup>47</sup> Smith, *Rationality*, p. 2.

<sup>48</sup> Friedrich A. Hayek, “The Use of Knowledge in Society,” pp. 519-530.

institutions so that all our actions will be wholly guided by known purposes.”<sup>49</sup> In his ambition, the planner criticized by Hayek is similar to Scott’s ‘authoritarian high modernist’.

In contrast to constructivist rationality, ecological rationality begins with the observation that individuals do not consciously behave as if they were constructivist maximizers, but that the rules of thumb and behaviors they adopt are nevertheless fitted to the order which emerges from social interaction.<sup>50</sup> The behaviors, norms, and institutions which evolve in markets are undesigned by any one mind possessing a comprehensive view. They are however, reflexively reasonable, the product of mutual adaptation: “The behavior of an individual, a market, an institution, or other social system involving collectives of individuals is ecologically rational to the degree that it is adapted to the structure of its environment.”<sup>51</sup> The logic of ecologically rational institutions and behaviors is often invisible to those attempting to rationalize the system from a planner’s perspective.

Hayek’s and Smith’s ‘ecological rationality’ is difficult to connect cleanly to practical wisdom, although the mental processes of decision making they describe bear a strong resemblance to practical wisdom. Hayek’s early work in neuroscience grounded his work on the limits of constructivist reason: because he was convinced that it was a logical impossibility for the human brain to formulate a comprehensive account of its own functioning, Hayek was understandably skeptical that human practical reason could be described in purely constructivist terms.<sup>52</sup> Human practical reason was driven by the pursuit of goals and purposes, but its process was intuitive, not calculative, reliant on a combination of rules of thumb and norms of behavior and its ability to adapt those rules when they no longer work.

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<sup>49</sup> Hayek, *Law, Legislation, and Liberty*, pp. 8-9.

<sup>50</sup> Smith, *Rationality*, p. 2.

<sup>51</sup> *Ibid.*, p. 36.

<sup>52</sup> Bruce Caldwell, *Hayek’s Challenge: An Intellectual Biography of F.A. Hayek*, p. 249.

Smith takes a similarly naturalistic approach to human cognition and choice, adopting the two-tiered cognitive system of modern cognitive science: constructivist reasoning requires cognitive effort, and the brain economizes on this effort by relying on non-constructivist reason for most of its decisions.<sup>53</sup> These non-deliberative modes of thought are able to relate present circumstances to previous experience, and draw on context-specific rules and norms of behavior without explicitly evaluating them.<sup>54</sup>

I do not want to overstate the congruence between Hayek's and Smith's naturalistic accounts of decision making and the practical wisdom tradition: in Hayek's account, even the mind and its categories of reason are subject to evolutionary development,<sup>55</sup> and Smith argues that the existence of a deliberating mind is itself only a useful evolutionary illusion masking automatic brain processes.<sup>56</sup> Nevertheless, the dichotomy between conscious deliberation (which often takes constructivist form) and the less describable, more habitual mechanisms by which most decisions are made, mirrors the same divisions in the practical wisdom tradition; for this reason their discussion of the relationship between the two modes of reason is relevant.

In the relationship between constructivist and ecological modes of reasoning, both Hayek and Smith give primacy to ecologically sensitive reason. Constructivist frameworks are useful for understanding the logic and efficiency of evolved norms and institutions, but existing norms and institutions are not generated by constructivist method, and their evolution cannot be predicted by constructivist analysis—they survive a process of selection which is invisible to constructivist reason.

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<sup>53</sup> Daniel Kahneman, "Maps of Bounded Rationality: Psychology for Behavioral Economics," *American Economic Review*.

<sup>54</sup> Smith, *Rationality*, p. 32.

<sup>55</sup> Hayek, *Constitution of Liberty*, pp. 23-24.

<sup>56</sup> Smith, *Rationality*, p. 33.

In light of the inability of constructivist reason to comprehend the emergent order in markets, how useful is constructivist reason as a tool for policy? Both Smith and Hayek argue strenuously against exclusive reliance on constructivist reason in policy design. According to Smith, policy design is inherently constructivist, but the success or failure of any program is a product of ecological forces, which determine what institutions and norms are efficient.<sup>57</sup> Hayek adds that not only is constructivist planning unable to predict the evolution of institutions; it is unable to evaluate the institutions which will emerge, since human values also evolve: “Men’s goals are open, that new ends of effort can spring up, ... even what we consider good or beautiful is changeable.”<sup>58</sup>

According to Hayek and Smith, policy should both promote the free initiative of its citizens (which drives evolutionary innovation), and safeguard those institutions which gives the largest space within which efficient institutions can emerge (the right of possession, the right of alienation by consent, and the enforcement of contracts).<sup>59</sup> In other words, what should be “constructed” are the conditions which allow emergent orders to work freely: “for in fact we are able to bring about an ordering of the unknown only by causing it to order itself.”<sup>60</sup>

### ***3.4 Implications for Economic Models and Practical Wisdom***

Each of these three examples explores the space between formal accounts of decision making and action and the reality of actual decision making and behavior. All three draw similar connections between formal accounts and informal behavior: formal accounts are sketches of a more complicated reality, but are not sufficient as a means of making decisions. Each example

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<sup>57</sup> Ibid., p. 322.

<sup>58</sup> Hayek, *Constitution of Liberty*, p. 35.

<sup>59</sup> Hayek, *Constitution of Liberty*, p. 4; Smith, *Rationality*, p. 324.

<sup>60</sup> Hayek, *Fatal Conceit*, p. 83.

offers lessons for the practical usefulness of formal accounts in light of those crucial aspects of decision and action which it cannot capture.

Suchman's analysis of machine-human interactions suggests that plans can provide a useful orientation toward action, but should be designed to provide space for situated action to unfold. Consequently, programmers should place less emphasis on the specified ends of their programs, which may be superseded by unforeseeable contingencies as humans make use of the program. Plans should allow space for the creative but unpredictable directions that situated action may take. Similarly, Scott's analysis of large scale social planning suggests that planners and reformers must allow a place for the surprises that will certainly occur as a result of irreducible contingency, leaving room for the creative innovations and adaptations of *mētis*, by reducing community disruptions and emphasizing flexible, multi-use institutions. The realization that their models are incomplete should induce a certain amount of humility in planners, who should plan incremental, reversible steps, and not seek wholesale redesign of social systems which they cannot fully comprehend. Hayek and Smith, like Suchman and Scott, urge planners to safeguard the social spaces in which informal adjustments and emergent norms and institutions operate, even though the nature of those adjustments is impossible to predict or evaluate with constructivist approaches. A framework in which property is secure and alienable, and in which promises are enforced, gives rise to emergent orders which are superior to planned order.

In each of these three areas, researchers urge a certain humility about the usefulness of formal plans and models of action: formal models should not be employed in a way that is heedless of informal human actions and institutions that are both invisible to informal method and crucial to social order. To leave room for these informal processes, planners should hold

lightly to the goals of their plans, allowing those goals to change if the creative adjustments of human beings in society reveal new goals and more efficient institutions.

How are the practices of situated action, *mētis*, and ecological rationality related to practical wisdom? These things are similar to practical wisdom in their operation, but their scope is narrower. The domain of practical wisdom is the entirety of a person's life; specific situated actions, the exercise of *mētis* in local affairs, and the search for adaptive behaviors can contribute to the entire life project over which practical wisdom acts. A person of practical wisdom must make all of these decisions; any decision which must address contingent circumstances and affects wellbeing and character comes under the government of practical wisdom.<sup>61</sup>

As a result, the advice drawn from these three examples can help us to think about the uses and limits of economic models in normative analysis. Although economic optimization models are unable to capture radical uncertainty and the ambiguities of objective functions and constraints, the practical wisdom which navigates these uncertainties is crucial to the functioning of markets. The conditions which foster and sustain practical wisdom, and give it room to adjust creatively, are economically important even though they cannot be explicitly modelled. Practical wisdom can be given its due in policy advice by economists who are aware of its importance, in spite of its absence from their models.

When practical wisdom is viewed in its broadest perspective—not the perspective of someone trying to make copies, or to organize purchases or business practices, but the perspective of an entire life to which all purposeful action is directed—its exercise takes on a greater significance. When the operation of practical wisdom is seen in mundane actions (using a copier, buying a car, starting a job) its value is more likely to be instrumental, bringing about more efficient outcomes than externally directed plans or guidance. When instead practical

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<sup>61</sup> Aristotle, "Ethics," 6.5.



wisdom is the self-direction of a person in her entirety toward her end, practical wisdom becomes itself a basic human good: the freedom of self-government. Its exercise becomes valuable not simply because it leads to better narrowly-defined outcomes; in the exercise and development of practical wisdom the person's autonomy and self-direction are at stake.

It thus becomes incumbent upon economists to give normative weight to human freedom, not just because it is instrumentally useful in getting people what they want, but because it is an ultimate good, like life, friendship, and truth.<sup>62</sup> Thus, even imperfectly exercised practical wisdom is valuable as part of human development. Amartya Sen, in *Development as Freedom*, notes that people value freedom not simply because they are able to choose better for themselves than someone else can, but because they value the ability to decide for themselves, to direct themselves toward their own fulfillment, however imperfectly.<sup>63</sup>

#### **4 Concluding Thoughts**

When the account of decision making in the practical wisdom tradition is contrasted with the economic account of choice (rational choice), it becomes clear that the gap between the economic theory of action and the practical reality of choice cannot be bridged through the development of more complex models. This poses a challenge for the use of economic models for policy analysis: they cannot help but leave out of their formal analysis aspects of actual decision making (practical wisdom) which are crucial to the operation of the economy. There is consequently an inescapable incompleteness in any normative analysis which makes use of the economic model of decision making.

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<sup>62</sup> Finnis, *Natural Law and Natural Rights*.

<sup>63</sup> Amartya Sen, *Development as Freedom*.

Insights from three different treatments of the gap between the formal analysis of choice and the reality of human behavior offer guidance for how economists might modify the insights of their models of choice when offering policy advice. Common to all three examples is advice to consciously structure institutions which leave space for the operation of practical wisdom—for informal skills in decision making and creative adjustment to contingency. In addition, policy makers should hold lightly to the goals of their plans, since the goals of institutions may change unpredictably under the adjustments to unmodelled contingency. Finally, the virtues and informal skills which elude formal modelling ought to be valued even when they cannot be given a formal rationale in economic models.

This advice may seem strange to model-inclined economists, but it is already being followed implicitly in several economic disciplines. The concepts of tacit knowledge in industrial organization,<sup>64</sup> and of social capital in development economics,<sup>65</sup> are examples of phenomena which do not enter directly into models, but which find a place in cost functions and human capital earnings functions without a clear account of how they work. Despite ongoing efforts to model these concepts, and dissatisfaction with them because they resist formalization,<sup>66</sup> they merit a place in economic analysis. They should be an encouragement to economists that concepts which lie outside of our modelling efforts can still find a place in our analysis and our policy advice.

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<sup>64</sup> See Richard Nelson and Sidney Winter, *An Evolutionary Theory of Economic Change*. For a more recent survey, see Peter Thompson, “Learning by Doing,” in *The Handbook of the Economics of Innovation*.

<sup>65</sup> Steven N. Durlauf and Marcel Fafchamps, “Social Capital,” in *The Handbook of Economic Growth*.

<sup>66</sup> See Yuengert, *Approximating Prudence*, pp. 150-153, for a discussion of the limits of a formal treatment of tacit knowledge.

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