

Participating With the Known and the Value of Craft as Knowing

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Marlin Ray Sommers

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Abstract

Craft, here defined as skilled physical work of some scope, forms a rich way of knowing the world around us. Craft's value as knowledge is, however, obscured by certain tendencies in thinking about knowing and value. These lead to the conclusion that craft's value as knowledge is minimal. This conclusion is largely based on craft's physical character (achieving physical results through bodily activity) and on its practical character (aiming at meeting wants or needs, usually in a very specific way). I argue against inadequate views of knowledge which sharply separate knowing from doing and unduly prioritize knowing that. I also argue against inadequate views of the interrelations of values which unduly devalue activities done for the sake of meeting needs. In my positive response, I elaborate an epistemological notion of knowing by "participating-with" the object or aspect of reality which we (would) know. The fullest case of knowing by participating-with comes in the sorts of inter-actions by which we can know other people, but we can also participate-with other realities. Craft involves participating with a wide range of realities in the natural, built, and social worlds in ways that are robustly physical and robustly practical. Physicality and practicality enable distinctive valuable modes of knowing and participating with our world. In craft our bodily agency is engaged with the physical world. Crafts also lets us know aspects of reality through our successes, and our failures, at working with that reality to achieve our aims. The final chapter explores various goods of craft knowing through reflection on specific kinds of craft work. Craft allows participatory knowledge of the natural world, the built world, and the social world in which we live and move and exist. Craft also occasions self-knowledge and the intellectual virtues of attentiveness and creativity.

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1 Thinking of Craft as Knowing

I explore the value of craft as knowing. Skilled physical work allows us to participate with our world and with its inhabitants in rich ways. Because of this, such work affords us distinctive, extensive, and valuable knowing encounters with the natural and built worlds and with other people. As we work with such varied objects as trees or persons, wood or steel, construction conventions, or laws of nature we may know them through our bodies and through our agency. “Participating with” various realities in the way that craft requires may add a rich dimension to our knowing, one that we do not get by simply knowing propositions *about* these objects. Craft is (when all goes well) fruitful knowing. The results of work can manifest how the worker is in tune with the realities he is working with. If work is fruitful, this may manifest both the value of our active agency in intelligently working and the value of the natural or built objects with which he is participating.

I define craft as skilled physical work of scope. This definition of craft is stipulative but not unnatural. Many activities fit all four elements of this definition, and those engaged in skilled physical work of scope do often find a value in such activities that is diminished when any of the four dimensions is minimal or absent. Each dimension contributes a valuable aspect to the knowing that goes on in craft. However, some of these dimensions, particularly the work dimension and the physical dimension of craft, can also make it hard for us to appreciate craft as knowing. This introductory chapter explores some reasons we may be hesitant to think of craft as knowing and then sketches my responses to those worries. Central to that response is the pervasive importance of participating with the realities that we would know well.

First a few words about each dimension of my stipulative definition of craft. *Craft is work* and thus is in service of human wants, needs, or goals. Work is the link between what is supplied in nature and what meets our wants and needs. Ultimately, such goods derive from work on and with nature, but more proximately they often derive from work on or with some built object. A bicycle, for example, ultimately traces to work on iron ore, petroleum, etc. but

more proximately it traces to intelligent work on steel or plastic and tubing or bolts. Work activities are chosen for their contribution to meeting human goals. *Craft is*, more specifically, *physical work*. Of course, all work is physical in some sense since we are, after all, embodied beings; but with craft the physical specifics are key to what we are doing. Non-physical work like writing can be expressed in many physical media—I could be scrawling on a napkin, speaking into a recorder, or typing on a keyboard. What matters is not the physical specifics, but the verbal structure that results. But, when splitting firewood or changing a water pump on a vehicle, the physical accomplishment is what matters.

Not all physical work is *skilled work* or *work of significant scope*. Some physical work is very simple and repetitive and requires little skill. Work that is more than minimally skilled involves a learning curve; one must learn how to do the job by practice and often by coaching. Skill is, of course, a matter of degree, it is seldom lacking entirely. Even a seemingly brute job like shoveling gravel requires some know how in order to do work efficiently without hurting oneself. The skills of craft are not all as robustly physical as shoveling gravel. Some are more mathematical in character, as in creating the initial pattern for stair stringers. Not all skilled physical work is of *sufficient scope to be called craft*. It can be narrow in a way that diminishes its value as knowledge. As an extreme case, imagine a work life that consists in installing one part into an assembly where the installer does not even know into what machine the finished assembly figures. The operation requires skill and dexterity and requires a long time to learn, but that is the only operation one does (within that line of work) and one has no context for it. Craft, by contrast, involves much more breadth whether one is a farmer, auto mechanic, construction worker, etc. Scope often involves knowing and participating with systems of reality by growing crops, raising animals, managing a business, working with complex machines, etc.

Working and knowing, especially physical work and significant knowledge, strike many as two very different things. This contrast is not without some merit, and it has several aspects which I explore in detail later in this chapter. At this point, I simply note some ways the contrast can be drawn. We may think of knowing, especially the important sort of

knowing, as a matter of knowing *that* some claim is true or as a matter of having some other good *representation* of reality. By contrast, physical work is usually short on describing things and long on manipulating and using things. We may also think important knowledge needs to involve a broad and full vision of reality with universal, or at least general, scope. By contrast, work focuses on particulars, on *this* tree, *this* mower, or *this* cow. We might think that knowledge of significance must concern a certain set of important intellectual concerns. By contrast, the objects of work are often considered lowly or unimportant. It seems that knowing activities are aimed most directly at truth, understanding, or some other cognitive good. By contrast, work activities aim most directly at meeting our wants, needs, or goals. As an example of these contrasts, compare the approaches of the mechanic and the physicists to questions about electricity. When fixing a car, we care, not about the precision of Ohm's law regarding electrical resistance, but about the particular spot of high resistance stemming from corrosion on *this* circuit in *this* vehicle.¹ And we care about that because we want to use the vehicle, whether for pleasure or for further work. Knowledge as something independently worthwhile is often contrasted with usefulness and work ability. This contrast may be drawn in favor of either: some will denigrate knowledge as useless; others will denigrate usefulness as servile.

My endeavor to vindicate the value of craft as knowing requires that I make sense of these contrasts between working and knowing. Of course, I make no claim that craft knowing is valuable in all the ways that knowing can be valuable. So, there are indeed genuine contrasts between craft and certain kinds of valuable knowing. What I aim to show is that craft has significant value as knowing, not that it provides all the valuable knowing we need for a good life. Still, I must show that some aspects of the contrast are only surface contrasts, and that the real contrasts do not preclude work from being intellectually significant. (By "intellectually" significant, I simply mean significant as knowing and *qua* knowing.) Indeed, much of the contrast diminishes under closer examination. For one thing, skilled physical

¹ The example is from Matthew Crawford who describes unhelpful advice from his physicist father. *Shop Class as Soulcraft: An Inquiry into the Value of Work* (New York: Penguin, 2009), 82.

work has more features associated with knowing than we often appreciate. For another, stereotypical cases of knowing have more features associated with work that we often appreciate. In order to respond to the various worries discussed in this chapter we need a more adequate conception of what valuable knowledge is.

There are two major areas in which our default conceptions of what is valuable as knowing are inadequate. The one concerns what sorts of *relations and interactions* between a knower and an object or aspect of reality count as *knowing*, as well as what is needed for a full or robust knowledge. I refer to this as a conception of knowing. The other concerns the way in which various aims of activities and activities with various aims interrelate. For example, it concerns what we should make of the fact that some activities are done for the sake of other activities, or that some activities aim most directly at one good but also achieve other goods. I refer to this as a conception of the structure of ends. Ultimately, my proposals in both of these areas are unified by attention to how we often know objects or aspects of reality *through “participating-with” them in activities* of various sorts. But for much of the dissertation, conceptions of knowing and conceptions of the structure of ends are treated as separate strands of investigation.

This chapter proceeds as follow: Section one articulates in more detail the various difficulties with appreciating work as intellectually valuable and briefly indicates my responses to those difficulties. Section two indicates my case for rethinking our conception of knowing. Section three indicates my case for rethinking the structure of ends. Finally, in section four I indicate the plan and structure of the dissertation.

1.1 Worries about the intellectual value of work

Why is it hard for us to think of work, even skilled physical work of sufficient scope, as knowing, let alone as intellectually valuable? I have briefly indicated some reasons above. In this section, I lay out four categories of objections and difficulties in more detail. I also briefly indicate my responses to each sort of worry.

The first category concerns the tendency to think of knowing only as knowing *that* some statement is true or as abstract conceptual understanding. On such views, what is known

or intelligible is not really objects themselves. Rather than knowing a rock, for example, I would know statements about a rock or understand its properties. Thus, work will seem at best minimally intellectual because work is about doing things with the world and with objects in it more than it is about describing or contemplating the world. The second category of reasons concerns the objects of work. Even if it is allowed that rocks, lumber, and other physical things are knowable, they are often considered unimportant. If the objects we work with are unimportant, then any knowledge in our work might also be thought intellectually unimportant. The third category concerns the ways in which work deals with objects. The worker has different concerns than the scientist or metaphysician even when his concern is with the very same object. The worker is concerned with the object primarily as it relates to accomplishing something. Perhaps he wants to know which maple trees he should tap for sap, but for this he need not be interested in all the biologist's concerns. His concerns are more particular, governed by the requirements of his business rather than by the general goal of knowing maples and their environment. The fourth category of reasons is closely connected to this. The worker is interacting with the objects he knows for the sake of achieving something else, not strictly for the sake of knowing them. This objection need not be aimed at the knowing character of craft so much as at the value of craft.

1.1.1 Worry: knowing concerns propositions or conceptual understanding

Let us think first about the tendency to regard knowing as essentially a matter of knowing propositions. We can feel the pull of this, perhaps, if we compare operating a lawn mower with reading the manual for it. Reading can give us knowledge. We read about how it works, what the recommended maintenance is, what dangers present themselves and so forth. Pushing a mower across the lawn and back seems much more like a brute task; writing the manual seems an intellectual task. The same distinction might be drawn regarding the maintenance and repair of the mower. A service manual will give lots of information regarding mechanical clearances, part numbers, torque specifications and so on. A mechanic will be experienced with turning wrenches and adding oil. Of course, the operator or repairman will have to know some things about the mower to do his job, particularly when

difficulties arise and the work is not routine. But a view that takes knowing to be essentially a matter of knowing propositions will make a sharp distinction between knowing something and applying that knowledge. The knowing required to work will be sharply distinguished from doing the work. One who holds this view might elevate either work or knowledge. One could stress the tremendous importance of applying knowledge to real world situations and scoff at knowledge that is not practical. Or one might dismiss applied knowledge as second rate and uninteresting. Even if one with such views has a healthy honor for both sorts of activities, talk of applying knowledge often reveals the assumption that knowing and doing are sharply disparate.

Recently, some have argued that epistemology should shift some of its focus from propositional knowledge to understanding reality. This focus might hold more promise for appreciating work as knowing. Whether or not the notion of understanding allows for craft activities as knowing depends on whose conception of understanding we use. Some features of understanding do point to the way I want to rethink knowing. Understanding requires a grasp of some more comprehensive entity, and such a grasp is not just knowing a lot of propositions about an object. At the very least understanding requires that one grasp the right set of propositions and how they interrelate to each other; and some would argue that understanding involves grasping the object itself. However, a focus on understanding does not necessarily avoid the disparity between knowing an object and doing things with it. When we think of understanding an object we may well think of grasping some sort of mental model or conception of the object rather than grasping the actual physical entity we interact with. Even if we grant that we understand the very same object, we are likely to sharply distinguish a mental grasp, involving articulation and conceptualization, from physical interaction. Even if we think of knowing as understanding we might sharply distinguish knowledge and the application of knowledge. Views that prioritize understanding will often (though not all need to) generate the same type of objection to thinking of working as knowing as do views that prioritize propositional knowledge.

In response to worries about the intellectual value of work that arise from such views of knowledge, I argue that, in the primary sense, knowledge is of objects or realities and that the modes of knowing objects are not limited to those generally associated with propositional knowledge or with understanding. One can know these realities through a variety of methods, often including physical interactions. Forming propositions and developing conceptual models make important contributions to our knowledge of objects to be sure, but knowing is broader than these activities. Many of the activities typical of work serve as ways of knowing the objects one is working with. It may be objected that work activities are rather occasions for *coming to know* objects. According to this objection, activities of work will provide occasions for learning, that is, for coming to cognitively grasp the things with which one is working, but knowing would be a distinct state that might result from those activities. But if what we know, in the primary sense, is objects rather than descriptions of objects, the distinction between knowing and coming to know is less radical. Knowing is understood as being in cognitive contact with the object, which is an ongoing or iterative affair.² One comes to know something by engaging with it and continues to know it by engaging with it.³

1.1.2 Worry: work concerns unimportant or degrading objects

Another set of temptations to conclude that work, even skilled physical work of sufficient scope, is not intellectually important, comes from the sort of objects with which work is concerned. There are various motivations for disparaging the knowledge of such objects. It can be elitist: craft is for servants, not important people. It can be a critique of myopia or the love of money and things: craft results in small souls and a focus on making or acquiring things. It can be an affirmation of the need for a broad intellectual vision and wide-ranging understanding: craft is too narrowly focused. This worry does not require thinking of

² The focus on how we come to know is a distinctive of Michael Polanyi's epistemology. *The Tacit Dimension* (Garden City, NY: Doubleday and Company, 1966); Talbot Brewer speaks of worthwhile intellectual pursuits as "dialectical activities" where we gain a successively greater appreciation of valuable activities and the valuable things those activities involve as we continue to engage in successively more adequate ways. *The Retrieval of Ethics* (Oxford; New York: Oxford University Press, 2009) Both thinkers are significant for succeeding chapters of the dissertation.

³ Compare how we speak of knowing persons. If asked whether I know Tom, it makes perfect sense to say that I used to know him. This need not mean that I have forgotten what he is like, but simply that I no longer relate to him.

knowledge as a matter of knowing descriptions. It is not about the mode of knowing but about what is known. Work concerns itself with trees and cars, houses and corn stalks, or nuts and bolts. Such things may not be thought intellectually important. Or the line of thought might be carried further. Perhaps working with lowly things like sewer pipes and two-by-fours is positively degrading to the one who interacts with them.

I address this concern on a variety of fronts. I admit that some objects are less worth knowing than others. On the other hand, I argue for the elevated importance of knowing our immediate environment, which includes whatever we need to directly interact with to make a life. As for the charge that physical work is too narrowly focused, narrowness is also a characteristic of other modes of knowledge, for example, academic specialization. Some kinds of narrowness are indeed intellectually impoverished, but this need not be so. Knowledge of “larger” matters often comes through deeper knowledge of “smaller” things.

1.1.3 Worry: work focuses on narrow aspects of its objects

Aside from the charge that work concerns the wrong objects, a greater concern may be that working concerns these objects, not in general, but, it seems, only in ways relevant to the task at hand. Even when work involves us in knowing the same objects as does science, work focuses on them as potentially useful and so has a narrower concern with them than does science. The worker might ask how to tap the maple for good sap rather than how maple cells function or how much water maple trees release into the atmosphere. He might ask how to sharpen a mower blade or diagnose a mower engine running rough, but he is less likely to seek a theory of metallurgy or thermodynamics.

Part of this objection needs to be conceded. The knowing associated with work is not the only kind of knowledge we need for a healthy intellectual life. Also, ways and styles of working vary. Some workers are concerned with a broader knowledge of the things they work with *as part of working with them well*; other workers might display an objectionably narrow focus that eventually diminishes their work. But there is something to be said for the narrow focus of work, even considered strictly from the perspective of knowing. Worthwhile knowing in all domains seems to demand a combination of breadth and depth and going deep

requires us as finite knowers to narrow our focus. The specificity of work tests and refines my knowing or makes evident my lack of knowledge. My general and abstract thinking about maple trees can be shallow and misguided even when I think I know them well at a theoretical level. But work tests my knowledge because I will either succeed or fail (to varying degrees) at obtaining the results I want. This testing involves both my ability to make accurate predictive judgments and my knowing how to deal with the maple tree, or whatever I am working with. Work forces me to engage concrete things in their individuality through my own agency.

1.1.4 Worry: work is an instrumental activity

The instrumental character of work provides the final class of objections considered here. This worry is the flipside of the worry that work concerns the *objects* in the wrong way. Here the focus is on the role of the activity in the *agent's* life. The very fact that an activity is performed to achieve some further end, rather than exclusively for its own sake, is sometimes taken to indicate its inferiority. Work and technical skills are sometimes labeled *servile arts* by contrast with *liberal* or *free arts* like mathematics, literature, or philosophy.

Chains of goals are often used to motivate this worry. We do one thing for the sake of another thing and that for some further aim; eventually, we must come to something done for its own sake and not for a further end. For example: *Why are you cutting down that tree? To make firewood. Why do you want firewood? To heat my house. Why heat your house? So I can be warm and comfortable. Why be warm and comfortable? Because being cold is annoying and keeps me from functioning well. What will you do in your nice warm house? Read books about trees. Why? Because I want to know about them. Why? Trees are interesting, and I want to know about them.*

Here we reach the end of the chain of goals. In this ironic, but not terribly unrealistic, example, the “servile” task of making firewood ends up being in pursuit of the “liberal” pursuit of knowing about trees. Theoretical knowledge of trees may be an unusual ending to the chain, but intellectuals could fill it in with various pursuits. Literature, theology, philosophy, linguistics, or one of the various fields of natural science might be taken to fill

that role. The objection to thinking of work as valuable knowing would, then, go something like this: Work, especially physical work, is (unfortunately) needed for the necessities of life. But it is simply and strictly to provide for activities that are non-instrumentally valuable. Intellectually valuable activities by contrast are pursued only for the sake of knowing and not for the sake of providing the material requirements of life.

This worry calls for several responses. First, it is not true that activities are only valuable for their own sake if they are not also for the sake of something else. In fact, many activities generally acknowledged to be valuable for their own sake involve seeking to produce some valuable result. Also, in some circumstances, good results manifest an underlying goodness in the activity that yields them. Finally, there is a certain epistemic advantage to activities that focus on a further result. This lets us work with the known in achieving some goal. We often know other people through working with them on some project. Similarly, work lets us know a range of realities as co-participants in some endeavor. We can know such things as two by fours and spark plugs by using them as tools. The fact that these activities aim at producing some good does not mean they are valuable *only* as instruments contributing to some other good.

1.2 Rethinking knowing

My target is the intellectual value of skilled physical work. Since common understandings of knowing do not do justice to physical participation with objects, this requires a lot of preparatory work in the philosophy of knowing.

We must think about knowing and what it is to know something. In fact, one of the most important steps is getting clear on what exactly the “something” is that we know when we know something. Philosophers often act as if the primary entities we know are not *objects* like bicycles or frying pans, but *propositions* like ‘bikes have wheel,’ ‘frying pans are round,’ or ‘this frying pan is cast iron.’ Obviously, if what we know are propositions and not objects, propositional knowledge will become the focus of knowing. But, I argue that the main things we know are objects and not propositions. Propositional knowledge is ill suited as a paradigm of knowledge. We need to see knowledge of objects like bicycles, frying pans, trees, species,

and, especially, persons as our paradigm of knowing. Taking persons as our paradigm knowable opens the door to thinking about how we might know trees, pans, or bicycles through working with them. A main way we know persons is through doing things together with them. Similarly, we can know objects like bicycles or frying pans by doing things with them. This lets us see the intellectual significance of physical and embodied interactions like taking test drives or doing various physical jobs. The limited way we often think about knowing not only keeps us from appreciating physical work as intellectually valuable; it prevents us from identifying knowing in other domains as well. I will here approach the question of knowing through the example of knowing a bicycle.⁴ Consider a serious cyclist contemplating the purchase of a bicycle. He will be excited by descriptions of the lightweight frame, disc brakes, and other premium features. But still, he will want to see the bike and look it over. If he is really into bicycles, he will want to test ride the bike. Then he can feel the light weight, shift through the gears, and stop smoothly and quickly with those awesome brakes. Out of all this obsessing over the machine, what counts as *knowing* the bicycle? Is it only grasping the descriptions and technical information? Is it the process of visually examining the bicycle? Is riding the bike an activity where knowing happens?

If knowing propositional claims is the essence of knowing, the primary knowing activity would involve descriptions. The manufacturer or sales person assures the prospective buyer that, for example, the bike has disc brakes of a certain diameter and that this is advantageous for reasons *x*, *y*, and *z*. In looking closely at the bike, he comes to know a few more propositions about the bike. If knowing is knowing propositions, then looking at the bike is valuable (epistemically and intellectually) because of the true claims it allows him to ascertain. Similarly, riding the bike would count as an occasion for knowledge insofar as it resulted in the cyclist knowing more propositions about the bike. Riding the bike would let him know *that* he must push the lever forward to shift down on the pedal gears, *that* the brake

⁴ Is this a work example? Bicycle riding is often work—when the object is to get to a destination and the bicycle is chosen as the most fitting way to accomplish that task. But bicycle riding is often done for sport or exercise. This may be the case even when the cyclist is headed somewhere he would otherwise drive to. I have taken many short trips on a bicycle not to spare the use of a car but for exercise and relaxation.

lever moves easily, and so forth. But when we are thinking only about knowing propositions, actually looking at the bike and riding it are only means to finding out propositions. And they are means that are replaceable. He could learn those propositions without seeing or riding the bike, perhaps from someone who has ridden it or perhaps simply from an engineer. This would not diminish their status as propositional knowledge.

If we think of terms of understanding as the primary form of knowledge, we will see some of these propositions as substandard knowledge. Some of them may be important elements of conceptual understanding; others will not be. Understanding involves a broader grasp of the bike. How do the mechanisms work? How do the materials it is made from function? etc. Hearing or reading descriptions of the bike, looking closely at it, and riding it would all be occasions for gaining knowledge of the bike when knowing is understood as conceptual understanding. All three could contribute to a conceptual grasp of the bicycle's construction and function. Descriptions and explanations help. Seeing the various parts and their assembly would certainly help and operating the bicycle would probably clear up some confusion and cement how certain systems work. But, like propositional knowledge, conceptual understanding is independent of any of those occasions. A mechanically savvy person could do without descriptions of other people. Possibly he could gain the relevant understanding without seeing this particular machine. (However, he probably could not imagine it very well if he had not seen similar machines or pictures of them.) In principle, conceptual understanding can be had without operating the machine.

Whether knowing is construed as conceptual understanding or as propositional knowledge, the activity of riding is only an occasion of knowing only in a restricted sense. Operating the bicycle can enable one to learn more true claims about it (propositional knowledge) or to further one's understanding of how it works. But either end could be achieved in other ways, and riding the bicycle seems rather distant from knowing. Riding the bike might seem to be related to knowing the bike in the same distant way as buying a book is related to coming to know the contents of the book. But there is another way to understand

knowing that allows us to see riding the bicycle as a significant occasion of knowing and the activity of riding as closely connected to knowing.

We can motivate this approach to knowing by asking: why does our enthusiast want to ride the bicycle and not merely hear about or look at it? We might say it is simply for the pleasure of riding, and he will no doubt enjoy it, but simple enjoyment is not the main reason for a test drive. What he wants is to experience it and to fill out his knowledge of this new mechanical device. The test drive is about knowledge. He wants to know about this new bike or about one of the cool new features before he buys it. Propositional knowledge or conceptual understanding are incomplete. After hearing about and seeing the bike, he still needs to test-drive it. This is to know the bike through his body as a whole and not just through the processes of vision. It is to know it through his activity and agency in steering, accelerating, and stopping. The test drive allows him to participate with the bicycle in the activity of moving from one place to another. I call this knowing by participating-with.

This notion of knowledge by participating-with allows us to see craft activities as knowing activities; for the participatory activities of craft affords opportunities to be in intelligent contact with various objects and aspects of reality. Some of the participatory activities of craft are physical (in the ordinary sense of “physical activity”) and others are not. And not all ways of being in intelligent contact with the known are well described as participating with it. Once we describe knowing as intelligent contact with the known, we are in a position to describe the participatory activities of craft as one form of knowing alongside of others. I do not have general criteria for what counts as intelligent contact with reality or for delimiting the exact boundaries of what is knowledge, but I do have arguments that much that goes on in craft is knowing.

Contact with reality can be very direct or it can involve extended linkages. For someone who has mastered the basics of arithmetic, his cognitive contact with the realities represented by the multiplication table is very direct, though not of course physical. Testimonial knowledge on the other hand is an example of less direct contact with reality. Consider, for example, someone with no calculus background who knows the derivative of a

particular function because a mathematician told him the answer. The contact with reality that is involved runs through the testimony of the expert. And it is a very thin and indirect contact because the mathematician has not helped him *understand* the relation but only assured him that *this* is the derivative of *that*. So, understanding does represent one way in which knowledge can be more robust. The activities of craft represent another way. For example, I might know *that* oak boards are likely to split if screw holes are not predrilled. I could know this by reading it in a book whose (non-woodworking) author had talked with various wood workers. In such a case, my intelligent contact with oak board reality is indirect and mediated through several links. Or, I could know this feature of oak somewhat more directly, if I have observed others building oak furniture. But, if I myself have participated repeatedly with oak boards, I will know them through another way of intelligent contact. The splitting board will have frustrated my attempts to work with these boards to make something. I will know the need to predrill as part of my knowing how to work with oak. The point is common sense, at least in craft circles, that book learning does not get you what experience does. The right kind of experience and practice makes knowledge fuller.

1.3 Rethinking the structure of ends

Appreciating work as intellectually valuable also means thinking in the right way about why we do the things we do and what it means to do something for the sake of something else. I am arguing that work is valuable as an intellectual activity and not only as a means to the results it achieves. In some way then, work is done for the sake of knowing, and if some working activities are themselves knowing activities then those activities are done for their own sake. But how can this be the case given that work activities are done largely to achieve certain practical results and that it would not normally make sense to choose these activities if we did not want or need those results? People do not usually cut firewood, for example, if they do not want it or want to sell it. With regard to cutting firewood, I agree that the activity is not usually choice-worthy unless it produces something that we have reason to pursue, but I deny that the work involved is valuable only as a contribution to the existence of firewood. The work which I consider in this dissertation--skilled physical work of some

scope—is also valuable because it is a way of knowing the world through one’s body and agency.

How can we make sense of the kind of value work exhibits? It is valuable as knowing, but its choice-worthiness seems to depend on its instrumental value in producing results. This does seem like a puzzle. One way to resolve the puzzle would be to argue that the value as knowing is small enough that, in practice, the activity of work is only justified when it also has instrumental value. Perhaps when we are only concerned with knowing there are always superior ways of knowing than what comes through work. When we work we get some intellectual benefits, but we would always be better off if practical considerations did not require us to work and we were free to concentrate on other modes of knowing. Certainly, that choice structure happens. But other times the fact that craft aims at some further result actually contributes to its value as knowing.

It is interesting in this connection to consider historical examples. In *Republic II* Plato (in the character of Glaucon) says that activities valued both for their own sake and for the sake of what they produce are the best activities. They are superior both to activities valued only for their products and to activities done only for their own sake. He gives knowledge and sight as examples of the best sort of activities (357b-358a). If we follow Plato’s categorization, and if we can show that craft counts as knowing, then we can see the productiveness of (some) work as a manifestation of its value. Consider also Aristotle’s claim that virtuous action is chosen for its own sake. But, clearly virtuous action involves aiming at choice-worthy results. One simply is not acting courageously, for example, unless what one seeks in the face of danger is something it makes sense to seek. For Aristotle the valuable activity of acting courageously would not be what it is if it did not involve seeking some other worthy goal, a point emphasized by David Pears.⁵ Similarly, craft is work and thus by its nature involves seeking goods in addition to simply knowing the reality one is working with. This work character of craft contributes, I argue, to its value as knowing.

⁵ David Pears, “Courage as a Mean,” in *Essays on Aristotle’s Ethics* (Berkeley and Los Angeles: University of California Press, 1980), 171–87.

The notion of knowing by participating with the known, which I employ to characterize the way craft activities are knowing activities, also proves helpful with regard to the structure of ends. The knower participates with the known in some activity which is usually aimed most directly at some good other than knowing the known. For example, one might know another person by working with them to build a storage shed. The direct aim of such activity is a storage shed, and most likely the activity would not be chosen unless there was need for such a shed. Still, knowing the other person has a value that is certainly not limited to its contribution to the shed. This structure is pervasive in craft: we know various objects or aspects of reality through participating with them. However, this knowledge is seldom the direct aim of the participatory activity, and this knowledge is seldom the main reason we choose craft activities.

1.4 The plan of the dissertation

The five remaining chapters pursue both strands of the question concerning what constitutes valuable knowledge. Roughly speaking, chapters two and three concern the strand involving our conception of knowing, chapter four concerns the strand involving the structure of ends, chapter five pulls these strands together via an account of knowing by participating-with, and chapter six then explores some more specific goods of craft knowledge.

In chapter two I specifically address the common preoccupation with propositional knowledge. As noted above, many philosophers focus on when we can say that a subject S knows some proposition P. This gives pride of place to knowing propositions about objects rather than to knowing objects. This approach has difficulty accounting for the distinctive value of knowledge (as compared to true belief) and it has difficulty distinguishing knowledge from other beliefs that have good epistemic qualities but fail to be knowledge. I argue that these difficulties are explained by the fact that propositions are not the basic or most fundamental form of knowledge. Rather, knowing is more fundamentally about knowing objects or aspects of reality which propositions concern.⁶

⁶ This is complicated by the fact that some propositions, at least, can be considered “objects” in their own right.

In chapter three I examine some less commonly discussed notions of knowledge. Understanding, knowing how, and Aristotelian “truthing” move us closer to the way in which I advocate we think about knowledge. Understanding involves, at least, comprehensive and interrelated knowledge *about* an object. In some cases, it can amount to knowing the object itself. Thinking about the notion of knowing how moves us toward a consideration of embodied knowledge and connects knowledge to the ability to work intelligently with objects and aspects of reality. Aristotle discusses his notion of truthing with regard to theoretical contemplation, ethical choices, and skilled crafts. He sees all these as ways of knowing,⁷ but they involve different states of the soul and even parts of the soul depending on what object is being known. Aspects of each of these will be integrated into my discussion of knowing by participating-with in chapter five.

In chapter four I address a variety of issues in the structure of ends that are relevant for my argument. Some of these seem only loosely related to each other. I explore and push back against Aristotle’s rigid structure which systematically devalues activities that are done for the sake of something besides themselves. I argue that the end structure associated with work is not limited to work activities. Many activities that are generally acknowledged to be valuable for their own sake involve by their nature seeking external results or benefits. Also, benefits often reveal an activity’s value rather than being merely independently valuable products. Against the charge that the objects we know through work are not worth knowing, I argue for the distinctive value of knowing our particular environment. Also, we know more universal realities largely through more intimate knowledge of particular things.

Chapter five develops the notion of participating-with in some detail and connects it with the epistemology of Michael Polanyi. I argue that participating with the known is essential to much of our knowing—much more than just work knowledge. Working is, however, a particularly good way to participate with a significant class of objects because of its physical and practical character. As noted above, the notion of participating with also helps to make sense of the instrumental character of work. We know objects by participating with

⁷ Aristotle does not say this explicitly. But I argue that we should understand truthing as knowing.

them in some activity that is aimed at something distinct from either the knower or the known. Just as in the case of persons, knowledge comes through working together toward some other goal.

Finally, chapter six offers a more specific exploration of intellectual goods and knowing involved in some forms of skilled physical work exercised over a sufficient scope. I proceed by examining how craft can yield knowledge of the natural world with which we work, the built world that structures our work, and the social world within which we work. Beyond that physical and practical dimensions of craft can make valuable contributions to our self-knowledge. Craft calls forth the virtue of attentiveness to realities quite alien to us and not easily malleable to our will. Finally, craft provides a basis and occasion for disciplined creativity.

2 What Do We Know? The Primacy of Knowing Objects

Rather than asking how one knows Jaran or Joella, a mountain, a car engine, or other such *objects*, epistemologists often ask how we know *propositions* about such objects. (I use the term “object” broadly enough to include persons). For instance, do I know *that* Jaran climbed a particular mountain? Or, do you know *that* the engine in Joella’s garage is a Nissan VQ35? Of course, knowing that Jaran climbed the mountain may relate in all sorts of ways to knowing Jaran or knowing the mountain. But the marks and characteristics of propositional knowledge differ from the marks and characteristics of the knowledge of objects. To continue the present examples, note how knowing that Jaran climbed the mountain is basically an on/off phenomenon: one either does or does not know this proposition. By contrast, knowing Jaran is a matter of degree and also a matter of various dimensions or aspects. One may know him well or not so well, or better in some dimensions than in other dimensions. Another difference between propositional knowledge and the knowledge of objects is that whether or not one knows a proposition is closely tied up with whether one’s belief of the proposition has an appropriate basis, i.e. with whether the belief has justification or some analogous property. By contrast, knowledge of objects is more closely tied up with one’s grasp of and relation to the object, that is to say, with one’s intelligent contact with the relevant reality.

I argue that the knowledge of *objects* or *aspects of reality* is more central and more fundamental to epistemology than is propositional knowledge. I want to draw attention to two aspects of this claim. First, seeing object knowledge as primary allows us to better see aspects of knowing and ways of knowing that are not easily pushed into the categories of propositional knowledge. The obvious example in the context of this dissertation is craft activities. These are usually short on descriptions and long on working with objects and employing skills. Another case of knowing not easily discussed in terms of propositional knowledge is knowing persons. I will use knowing persons as a paradigm at various places in the dissertation. The other aspect of my claim that object knowledge is primary concerns the way in which propositional knowledge needs to be theorized in the context of knowing

objects. Admittedly, evaluating whether or not one knows a proposition is not simply a matter of evaluating how well he knows the various aspects of reality the proposition concerns. Still, a theory of propositional knowledge would ideally locate it in the context of object knowledge, or so I argue.

My strategy for arguing that claim involves two prominent “problems” discussed in the theory of propositional knowledge, namely the Gettier problem and the value problem. I take these difficulties to derive from central features of propositional knowledge. Because they stem from central features of propositional knowledge they reveal some ways in which propositional knowledge is secondary to object knowledge. Part of my strategy is to characterize the Gettier problem and the value problem in terms of intelligent contact with objects or aspects of reality, where objects are construed broadly to include persons, artifacts, and natural objects, as well as more abstract items such as systems, principles, and mathematical realities.

Section one presents the Gettier problem and the value problem, in part through the work of Jonathan Kvanvig and of Linda Zagzebski. Sections two and three then develop alternative ways of making sense of the phenomena those philosophers discuss. These alternatives rely on situating propositional knowledge in the context of knowing objects. Section four pulls the threads together in order to more systematically present my view of the relation between knowing objects and propositional knowledge. Sections five and six elaborate my conception of the primacy of knowing objects by considering puzzles or difficulties. Section five concerns what is meant by calling object knowledge more fundamental. Section six addresses questions regarding what are the “objects” of object knowledge.

2.1 Problems in theorizing propositional knowledge

I do not discuss the Gettier problem and value problem in order to solve them or in order to argue that one theory of propositional knowledge does better than another with regard to these problems. Rather, I aim to illuminate certain features of propositional knowledge. These features then figure in my argument that propositional knowledge is best seen within

the larger and more fundamental context of intelligent contact of the knower with the known. The Gettier problem is named after Edmund Gettier who sparked massive attention to the issue among epistemologists of the last half century. The name of the value problem is somewhat self-explanatory. It concerns whether and why knowledge is valuable. In its present form the problem is about whether *propositional knowledge* is valuable and, if so, what could explain that value.

Gettier forcefully pointed out that one can have a thoroughly justified true belief in a true proposition and yet not know that proposition. His famous paper uses two cases as examples. In both of them, someone deduces a belief that is in fact true from a false belief that is epistemically justified.⁸ The one case is that of a man who has quite good reasons to believe that his friend Jones owns a Ford. From this he deduces that *either* Jones owns a Ford *or* Brown, another friend, is in Barcelona. Unbeknownst to him, Brown is indeed in Barcelona, and so it is true that *either* Jones owns a Ford *or* Brown is in Barcelona. However, Jones does not actually own a Ford. So that belief is false. The disjunctive belief is justified because its false disjunct is justified and it is true because its unjustified disjunct is true. The disjunction is not known, and so not all justified true beliefs are knowledge.

The Gettier problem has deeply shaped epistemological discussion ever since. Many cases have been proposed and directed against many different accounts of propositional knowledge. The Gettier problem has also motivated new approaches to theorizing propositional knowledge. The general moral of the Gettier problem is that there can be beliefs that are true and that an agent appropriately believes which are, nonetheless, not knowledge. By “appropriately believes” I mean that the agent’s act of believing meets whatever conditions are required by the theory of propositional knowledge under discussion. The sheer variety of Gettier problems in the literature reveals the difficulty (and some would say impossibility) of specifying necessary and sufficient conditions for knowing a proposition.

⁸ Edmund L. Gettier, “Is Justified True Belief Knowledge?,” *Analysis* 23, no. 6 (June 1, 1963): 121–23, <https://doi.org/10.2307/3326922>.

The Gettier problem concerns distinguishing propositional knowledge from other *true* beliefs, but the basic problem in Gettier cases can be seen more easily in certain cases of *false* belief. Beliefs can be epistemically justified without an appropriate connection between the belief and reality. Suppose that I know a philosophy talk is scheduled in a certain building at 3:30 in the afternoon. I do not know the room number, but, when I arrive at the building, I see a philosophy professor seated in room 335. This room appears well suited for the talk. This gives me a good degree of epistemic justification for concluding that the talk is in that room. In the normal and good case that justification would track the reality of the situation. The professor would be there because he knows the talk is there, and the sign that I take as justifying my conclusion really would manifest or make evident the fact that the talk is scheduled to be in that room. However, in the bad case where the talk is not scheduled for that room, the presence of the professor still justifies my conclusion, but it does not manifest any such reality as that the talk is in that room. Perhaps the professor is mistaken about where the talk is to be held, or perhaps he just finished teaching in that classroom. Either way, although I rightly take his presence as evidence, and though this can justify my inference, his presence does not actually make evident the reality I take it to manifest.

Even when the belief in question is true, the evidence for a belief can fail to manifest what we rightly take it to evidence. Hence, Gettier cases. To illustrate, we can tweak the previous example. Just as in the previous case, I conclude that the talk is in room 335 because I see a philosophy professor seated there a short while before the talk. However, the professor was there because he had just finished teaching in that room, and he has no plans to attend the talk. The normal connection whereby a philosopher's presence in a room, in another building, shortly before a departmental event, evidences the location of the event does not hold. What we take as evidence does not actually manifest the relevant reality, even though the inference that it justifies still yields a true belief.

Linda Zagzebski describes a recipe for generating Gettier cases which applies to most any account of knowledge that follows the schema *knowledge* = *true belief* + *x*. In this schema *x* refers to whatever is taken to be necessary for belief in a true claim to qualify as

knowledge. 'x' need not be epistemic justification; it could be conscientiousness in holding a belief, reliability in the process leading to the belief, etc. The recipe will work as long as x does not guarantee the truth of a belief. First, describe a false belief that satisfies x. Presumably there will be some element of bad luck here since beliefs that satisfy x are normally true. Second, adjust the scenario so that another instance of luck results in a true belief without affecting the factors that made the false belief satisfy condition x.⁹ One thing this helps us see is that, although actual Gettier cases may be rare, there is a very wide range of realistically possible cases. All that is needed is the right combination of lucky and unlucky circumstances, and actual Gettier cases do occur.¹⁰ Of course, Gettier cases need not be realistic or common to provide counterexamples to attempts to provide necessary and sufficient conditions for propositional knowledge. But the realistic nature of Gettier case is significant for my claims about the primacy of object knowledge over propositional knowledge, as will be seen below.

Before exploring this concept, we first need to consider the value problem. This concerns the difficulty in explaining why knowledge (usually propositional knowledge) should be more valuable than other true beliefs. It is, of course, only a problem if knowledge is assumed to be distinctively valuable. In that case an analysis of knowledge should let us see how or why knowledge is valuable. The value problem has been employed to evaluate accounts of propositional knowledge by arguing that some definitions of what knowledge is are better suited than others to explain why knowledge is valuable. But we will also look at an argument by Jonathan Kvanvig that uses this problem to argue that knowledge is not, in fact, distinctively valuable.

Sometimes the value of knowledge assumption is simply characterized as the claim that knowledge is *more* valuable than (other) true belief. This needs to be made more precise in two ways. First, the relevant comparison is between knowing and (merely) believing the

⁹ Linda Zagzebski, *On Epistemology*, Wadsworth Philosophical Topics (Belmont, CA: Wadsworth, Cengage Learning, 2009), 117.

¹⁰ I have heard various examples in conversation including one very much like the philosophy talk case described here.

same claim. True beliefs (that don't amount to knowledge) about something important could still be more valuable than knowledge about something less important. Second, even in that sort of comparison, propositional knowledge need only have a *distinctive* value not shared by the corresponding true belief. It need not be more valuable *over all*. Compare two people who have a correct belief about the function of a certain part on an engine. The one has knowledge simply on competent testimony; the other's belief is a good guess based on familiarity with engines in general and a close examination of this particular engine. Even though he doesn't know the claim that the first person does, he has a much better grasp of the engine, and perhaps even a better grasp of the function of the part in question. This is despite the fact the he does not *know that* the part functions as he thinks it does.

One epistemologist who uses the value problem to argue against a particular approach to theorizing knowledge is Zagzebski. She argues that reliabilist theories of knowledge do not adequately explain the value of knowledge. Whether or not a belief is produced by a reliable process does not make a difference with regard to its value. She draws on an analogy with coffee and coffeemakers. A cup of coffee is none the more valuable for being produced by a reliable coffeemaker or by any other reliable process. So, in the same way, however desirable it might be for me to reliably reach true beliefs, an individual true belief is not more valuable just because I tend to form true beliefs rather than false beliefs. If one accepts this claim and accepts the value of knowledge assumption, then the argument against reliabilism becomes straightforward. Reliabilism says that what distinguishes mere true belief from knowledge is the reliability of the process that formed it. Reliability does not confer extra value on a true belief. So, if reliabilism is true, knowledge is not necessarily more valuable than mere true belief. But knowledge is more valuable than mere true belief. Therefore, she argues, reliabilism is false. I consider this objection to reliabilism a bit more in section three.

Kvanvig uses the value problem to argue that, contrary to the value of knowledge assumption, there is no distinctive value to propositional knowledge.¹¹ This conclusion rests

¹¹ Kvanvig goes on to argue that there is another epistemic state that is distinctively valuable, namely understanding. He argues that understanding is a more important epistemic state than knowledge. I do not take up that argument here—though I do discuss his conception of understanding in the next chapter. I do however make a similar move

on two sub-conclusions. The first is that the value of knowledge is not intrinsic to it. By denying that the value of knowledge is “intrinsic” Kvanvig simply means to deny that it has a value which is not “explicable in any terms other than itself.”¹² If the value of knowledge were intrinsic, he argues, we might attempt to *elucidate* or to *get others to see* its value, but it would not make sense to try to *explain* its value in a non-circular way. Kvanvig claims circular explanations of the value of knowledge are unsatisfying, as evidenced by the strong tendency to seek explanations of the value of knowledge in terms of its effects or constituents.

Kvanvig’s other sub-conclusion is that some factors which make the difference as to whether a given true belief constitutes knowledge are factors that do not add any value to a belief. The factors which make a belief valuable and those which make it knowledge overlap, but they are not identical, and what distinguishes knowledge from otherwise good beliefs need not entail any difference in value. Thus the (alleged) distinctive value of knowledge cannot be explained in terms of its components.

His argument that knowledge requires factors that do not add to the value of a belief appeals to the Gettier problem. Kvanvig takes the Gettier problem to show that an account of knowledge which takes any of these notions as central would need additional conditions aimed at ruling out Gettier cases. He argues that it is very unlikely that all these additional conditions will contribute to the value of a belief which meets that condition. These conditions will be complex, with the appearance of being gerrymandered, because of the variety of situations they must rule out. The Gettier problem concerns “the presence of a certain kind of accidentality or luck,” But some luck is compatible with knowledge, and avoiding luck is not always intellectually valuable--knowledge comes by grace and not strictly by works.¹³ Kvanvig concludes from his discussion of Gettier cases, and of attempts to solve the Gettier problem, that the kinds of luck that block knowledge cannot be identified

in that I use the Gettier problem and the value problem to motivate shifting focus from propositional knowledge to some other epistemic state. In my case, that other epistemic state is the knowledge of objects.

¹² Jonathan L. Kvanvig, *The Value of Knowledge and the Pursuit of Understanding* (Cambridge University Press, 2003), 154 This passage is discussing true belief not knowledge. But this is where Kvanvig glosses his notion of intrinsic value.

¹³ Besides the passage under discussion here see e.g. 181. *The Value of Knowledge and the Pursuit of Understanding*.

as some distinctively dis-valuable species of luck. The only way, he thinks, that we could show these kinds of luck to be distinctively bad would be by arguing backwards from the supposed value of knowledge to the disvalue of whatever luck happens to block knowledge. And this would involve ascribing to knowledge the kind of “intrinsic” value that he rejects.

2.2 Contact with reality and the value of knowledge

I described the preceding difficulties in the theory of propositional knowledge because I want to argue that they reveal significant characteristics of propositional knowledge. Further, I take these characteristics to point to the primacy of object knowledge over propositional knowledge. Or, perhaps it would be better to speak of the primacy of evaluating a knower’s knowledge of the relevant object(s) over evaluating whether or not he knows some particular proposition. For, while the criteria of assessment differ, propositional knowledge does involve some knowledge of some aspect of reality. In this section and the next I look more closely at key moves made by Kvanvig and Zagzebski and reinterpret the phenomena in ways that clarify the distinction between propositional knowledge and knowing more generally. The current section takes up that task in relation to Kvanvig’s argument from the Gettier problem against the value of knowledge assumptions. Section three takes up that task in relation to Zagzebski’s argument against reliabilism. In section four I draw more generalized conclusions about the relationships between propositional knowledge and the knowledge of objects, while the last sections of the paper then briefly address some puzzles for my way of thinking about knowing.

One difficulty for making claims about the relationship between knowing objects and propositional knowledge is that I have not offered a theory or account of what it is to know objects. I have said that it is a matter of intelligent contact of the knower with the known, but I have not given answers either on what counts as intelligent contact or on what sorts of intelligent contact count as knowing. And, while future chapters characterize various forms of object knowledge and highlight various phenomena, they do not give a complete account or theory of knowledge. Nonetheless I find reflection on the Gettier problem and the value

problem a convenient place to start in exploring the relation between propositional knowledge and the knowledge of objects.

I begin with Kvanvig's case against the value of propositional knowledge, which as noted above, makes significant use of the Gettier problem. I pursue an alternative interpretation of a fact which he makes vivid: if there are informative necessary and sufficient conditions for sorting true beliefs that amount to knowledge from true beliefs that do not amount to knowledge, these conditions seem bound to be both complicated and inelegant. Kvanvig certainly seems right that any plausibly complex anti-Gettier condition will not wear its value on its sleeve. To rule out all possible Gettier cases we seem to need a long and ugly property. Such a property would have to sort out the various forms of luck, including those compatible with knowledge, and excluding those incompatible with knowledge.

Does this mean there is no difference in value between certain Gettier cases and corresponding cases of propositional knowledge? I do not think so; it is helpful to frame the question in terms other than those of belief properties. Putting the question in terms of the knowers intelligent or cognitive contact with reality suggests a different interpretation of the value involved. The properties of beliefs which Kvanvig speaks of include their history and circumstances. Like many epistemologists, he characterizes beliefs as acts of believing: some agent forms some belief in a certain way and in a certain situation. Many characteristics of the agent, his epistemic agency, and his situation can enter into the description. But the question of whether or not the agent is actually in contact with the relevant reality does not figure directly into that characterization of beliefs. Certainly, the distinctive value of knowledge must come from something beyond the truth of the belief involved, as Kvanvig has argued. But, this does not show that the distinctive value of knowledge will be found in properties of a belief that can be characterized independently of the actual relations between the knower and the known. Arguably there is a difference in value, because in cases of knowledge the agent is in cognitive contact with the relevant object, and in Gettier cases the cognitive contact is broken. The value of such a state need not be explained by the value or goodness of our belief forming agency.

Of course, the prospects for giving informative necessary and sufficient conditions for when an agent is in intelligent contact with reality are not too good. An adequate anti-Gettier condition that is described in terms that do not reference the knower making actual cognitive contact with the known, if there is such a condition, is bound to look like a laundry list. There are simply a lot of ways that the relation of appropriate cognitive contact between agent and reality can break down. The relevant contact may come through well-functioning visual perception, through some other perceptual modality, through rational insight, through testimony, through chains of reasoning, through experiments, or in various other ways. Any of these modes of contact with reality can go wrong and serve as a misleading ground for belief, and sometimes as a misleading ground for a true belief. A fully specified anti-Gettier condition would have to block all such possibilities.

Kvanvig argues we have no principled reason to think luck in Gettier situations dis-valuable and luck in other situations innocuous or even helpful. But, at least under one aspect, we can say when a belief's being lucky is problematic. Luckiness is problematic when luck *replaces* cognitive contact with reality as the explanation for why one believes truly. Luck is not epistemologically problematic when it *enables* cognitive contact with reality.¹⁴ Consider first, an example of luck *replacing* cognitive contact with reality as the explanation for my true beliefs. I believe that Jaran owns a Jaguar, but this is because he lied to me about owning the new car he drives. However, my belief is true since he does own a decrepit old Jaguar that he keeps locked in an outbuilding. I take myself to be in cognitive contact with reality because of Jaran's statements about the car he drives. But this is misleading, and it is only luck that explains why my belief is correct.¹⁵ On the other hand, my belief that Jaran owns a Jaguar might result from accidentally receiving a notice concerning the decrepit old car which he has secretly locked away. In this case I am lucky to have the true belief, but this luck *enables* me to have cognitive contact with Jaran's relation to that Jaguar, however minimal that contact.

¹⁴ I take the basic distinction among kinds of luck to be obvious and claim no originality. See for example Mylan Engel, "Is Epistemic Luck Compatible with Knowledge?," *Southern Journal of Philosophy* 30, no. 2 (1992): 59–75. Whereas I put the distinction in terms of cognitive contact with reality, he puts it in terms of evidence.

¹⁵ And it is worth remembering that it is only the generalized belief that he owns *a* Jaguar that is correct. The false belief that he owns *that* Jaguar which I see him driving is likely to me more prominent in my thinking.

In this case I am lucky to know Jaran owns a Jaguar, but the luck does not indicate a lack of knowledge.

We can say that luckiness is sometimes incompatible with knowledge, but the real problem is not the luck but the missing contact with reality. Luckiness is problematic when the evidence we base our belief on does not actually make evident what we take it to evidence or, more generally, when what we appropriately take to manifest reality does not actually manifest that reality.¹⁶ In other situations luck helpfully brings us into cognitive contact with reality. This sort of explanation for when a belief's being lucky is a bad thing might not be acceptable to Kvanvig. After all, he explicitly rejects attempts to work backwards from the (supposed) value of propositional knowledge to the disvalue of luck that keeps us from knowing in Gettier cases. However, I am not working from the value of propositional knowledge *per se*, but from the value of cognitive contact with the object(s) that our propositional knowledge concerns. Gettier cases are characterized by lacking such contact while having something that seems epistemically desirable precisely because it normally manifests such contact. Instances of propositional knowledge have a value that is distinctive of knowledge to the extent that they involve such cognitive contact—that is, to the extent that they involve knowing some object(s).

I take it that propositional knowledge must involve some intelligent or cognitive contact with reality if it is to be knowledge. That is to say, propositional knowledge must involve the knower knowing some object or aspect of reality in some way. But knowledge of objects is a matter of degree and of various dimensions. Propositional knowledge can often enough be had without knowing the relevant realities very well. Even knowing the very same proposition can involve wide variation in how well the underlying realities are known. A true statement like “this engine is running fine” reflects far more knowledge on the part of the knowledgeable mechanic who has checked it out, than it does for the temporarily reassured automotive hypochondriac who paid him to investigate his engine.

¹⁶ I use the notion of manifesting reality broadly to cover the various mediated ways we gain knowledge: perception, comprehension, informal reasoning, testimony, interactive experience, intuition, deductive inference, etc.

It is significant for understanding propositional knowledge that cognitive contact with reality is generally mediated. Such mediation includes the physical connections involved in perception, all sorts of artificial instrumentation, the causal chains by which objects cause their effects, the testimonies of other people that underlie much of our knowledge, and doubtless, many other forms of mediation. In some cases, the mediation may not be essential. If the object I know is of the right sort, as perhaps mathematical realities are, I might be able to know it simply through a direct cognitive grasp, the mediation of counted objects and teachers' testimony having been kicked away as a ladder no longer needed. But for much of our knowledge, mediated contact will remain essential.

Mediated contact with reality is still contact with reality, but it does raise some puzzles. For one thing, what distinguishes knowledge-enabling contact (which I typically refer to as "cognitive" or "intelligent") from other sorts of contact we have with things? Even without a theory, there are clear examples of both kinds of contact. A tractor that runs into a boulder has contact with the boulder, but it does not thereby know the boulder. A human who runs into a boulder and remains conscious might not know *what* he hit, but he knows the *thing* that he hit, if only in regard to its hardness and its refusal to budge. A student who measures some specimens and correctly reports their length had cognitive contact with those specimens. A student whose introspectively random guesses were correct because of the manipulations of a knowledgeable brain scientist may have had mediated contact with those specimens, but it was not cognitive contact. For knowledge, the mediated contact has to be received or taken up in the right way by the knower. Defining the boundaries of what counts as a right way would be a contentious matter, but fortunately there are clear cases of mediated cognitive contact that can serve as illustrations for present purposes.

Generally, having more forms of mediated contact and more active and intelligent ways of engaging the object will result in fuller knowledge of the object. The student who does the practice sets knows material implication better than the student who merely memorizes the definition and a few other instructor comments about material implication. The

worker who picks up a tool and uses it knows it better than one who only looks at it—if he is using it intelligently.

The fact that propositional knowledge can be had without knowing the relevant aspects of reality all that well is key for rightly appraising the Gettier problem and the value problem. By contrast to the degreed character of object knowledge, propositional knowledge is an on/off phenomenon. One might be justified in believing a proposition to a greater or lesser degree, and one might have greater or lesser certainty about a claim, but epistemologists treat whether or not one *knows* a claim as a binary matter. Its relation to object knowledge varies wildly. One might know a proposition as an isolated fact while hardly knowing anything about the realities the proposition describes. Or that very same proposition might express the key insight that solidifies one's understanding of the reality it describes. Propositional knowledge does, indeed, require believing a claim about something in the right way or on the proper basis. But this right way or proper basis can come through diverse means. And often these means do not require very full knowledge of the object. One can know by a mechanic's testimony that his car engine has four cylinders, or that it has no compression on cylinder four. One can compute how much fuel the engine is burning per mile based on his odometer and the meter on the gas pump. One can look under the hood and see that the engine has various parts bolted together. None of these require knowing the engine very well. Such means of contact with reality can go wrong; they are highly fallible. We may accept testimony from liars or readings from broken meters. We might base our beliefs on misleading appearances.

Because propositional knowledge can be based on complicated fallible linkages, and since it can concern objects that we do not know very well, there is a lot of room for connections between mind and world to break down. Many of these breakdowns will go undetected for reasons that do not destroy the propriety of the agent's belief. So, cases of appropriate false belief which appear, from the agent's perspective, to be knowledge are all but unavoidable. The possibility of such cases brings with it the possibility of Gettier cases; for at the core of both Gettier cases and cases of justified false belief lies the failure of what

normally manifests some aspect of reality to actually manifest that reality. If we consider these cases only with an eye to whether the agent goes through an appropriate process in taking the circumstance to manifest some reality, we may miss the glaring difference. In the one case the reality is manifested to the agent and he is put in contact with it; in the other case it is not actually manifested to the agent, and he is not actually put in contact with the object. The difference does not involve anything wrong with the agent's act of believing, and so we cannot identify Gettier cases by specifying ways in which the believer's act of believing is defective.

Similarly, we cannot distinguish between the value of an item of propositional knowledge and the corresponding Gettier case *if we evaluate only the agent's act of believing*. Whatever valuable features an instance of propositional knowledge may have that can be seen from this perspective will be shared by a corresponding Gettier case (or in a corresponding case of appropriate false belief). Such values might derive from excellence in forming and regulating one's beliefs or in conducting one's inquiry. For example, an astronomer might conclude something false about a star via an observational process with a fatal, but unknown and deeply hidden, flaw. She has done all due diligence on research methods and is well justified in the conclusion. Additionally, she works out the consequences of this conclusion in a way that displays an impressive grasp of its significance. There is a great deal of intellectual value in her accomplishment even though the conclusion is false. This same value would be present if this were a Gettier case and the conclusion turned out to be true although the flawed process did not manifest its truth. But the value distinctive of knowledge, namely, cognitive contact with reality, will be absent from such Gettier cases and from such cases of appropriate false belief.¹⁷

¹⁷ This does not rule out the possibility that Gettier cases involve a value (broadly intellectual) that the corresponding justified false belief lacks in that they involve true beliefs. However, it does not seem to me that the truth of the Gettier belief has much significance with regard to knowing and the value of knowing as long as it is indeed a pure Gettier case. However, if the agent starts to *participate with* the relevant aspects of reality on the basis of the Gettier belief, he will thereby gain knowledge of that reality. In the process what started as a Gettier belief, may become knowledge. In this way the luck of the Gettier case could enable one to come to know.

While I do not think the Gettier problem shows that knowledge is not valuable, it does show us something about the value of propositional knowledge. If an item of propositional knowledge can easily have a corresponding Gettier case, this shows that it involves a limited knowledge of the relevant object. The less robust, and the less direct, the agent's contact with reality, the more easily Gettier cases can arise. For example, consider a case where I appropriately believe that cylinder four is misfiring on my car on the basis of a mechanic's testimony. While my belief is true, the mechanic was (uncharacteristically) just making up a story. If I knew the engine and the misfire well enough, I would be able to catch the mechanic's dishonesty. That my belief is not knowledge shows a limit to my cognitive contact with the engine. But (in the good case) I do not need to know the engine very well at all to know that cylinder four is misfiring. I only need to know my mechanic and perhaps the general nature of engines and symptoms well enough to properly give credence to his statement. The fact that I did not know enough to catch the mechanic's uncharacteristic dishonesty does not mean that I do not know him or cars well enough to properly believe his statement. While propositional knowledge can be based on a thorough grasp and deep knowledge, they need not be. Case of propositional knowledge need not be valuable as knowledge to any great degree.

More robust and varied cognitive contact with reality results in a higher degree of knowledge and more of the value distinctive of knowledge. This is manifested in the fact that it is harder for Gettier cases to arise where we have what appears to be robust and varied contact with reality. Gettier cases are, of course, still possible because we could be multiply misled or systematically missing something. Consider the following case which describes a multiply Gettiered situation.

TABLE

Jason visits the home of Travis, his woodworking friend. Travis describes the massive wooden table he put in his kitchen. Travis tells him (truthfully) how the table had to be assembled in place because of its size and describes some of its distinctive features. Jason proceeds inside and views and touches the table, or so he thinks. Unbeknownst to Travis, someone has done the seemingly impossible and dismembered the massive table and carried out the pieces of the table. This person then projected a hologram of

the table so that both Jason and Travis seemed to see a table. As a matter of fact, the table was again present in the kitchen in the same place, since yet another party had brought it back and reassembled it (and this party did not know where the table had already come from). But the hologram prevented either man from seeing the actual table. Jason tried to touch the table that he thought he saw in the hologram, and he did indeed put his hands in physical contact with the reassembled table that was located exactly where the hologram table appeared to be. However, for both his hands, the nerves linking to his brain had been interrupted. No signals from his hand reached his brain, rather impulses determined by a cyber lab were sent to his brain as if from his hands. In this case the distant agents decided to give him the same signals he would have gotten from his hands for the first few minutes as a test of their system.

In the TABLE case we have multiple lines of apparent contact with reality. Jason has detailed testimony from the hands-on builder, whom he knows well. He sees something that seems to match the description, and he seems to feel the table in a way congruous with his sight and with the description. Nonetheless, his belief that there is a table in the room is fully Gettiered. He does have some cognitive contact with the table through Travis's testimony. This cognitive contact may let him know something about the nature and shape of the table *that Travis built*. In this bizarre case, however, the testimony does not let him know that such a table is in the kitchen or where it is in the kitchen. Thus, even what seems like very robust knowledge based on multiple forms of contact with reality is subject to Gettier cases. However, more robustness and more forms of cognitive contact make Gettier cases much rarer. The better an agent knows an object, the harder it is to imagine a parallel case where everything appears the same to the agent, but the evidence is all misleading. Of course, this is a matter of degree; such Gettier cases are indeed possible. And, for the purpose of refuting a theory of propositional knowledge that claims to give necessary and sufficient conditions for when an agent knows a proposition, all that matters is whether or not a Gettier case is logically possible. For my purposes, the likelihood or unlikelihood of Gettier cases is indeed a matter of interest because I am concerned with what it is to know an object to a greater or lesser degree.

2.3 Contact with reality and reliabilism

In this section, I use the notion of cognitive contact with objects to evaluate Zagzebski's argument from the value problem against reliabilism. Her argument affords a good case study in how I can approach questions in the theory of propositional knowledge from the standpoint of cognitive contact with objects. I do not defend reliabilism as a comprehensive account of knowledge. In fact, I am not committed to the claim that her argument fails against reliabilism *as a comprehensive account of knowledge*. Rather I show why reliable processes of belief formation sometimes contribute to the value of resultant beliefs and then explain why this important role for reliable processes does not vindicate reliabilism as a comprehensive approach to knowledge--even a comprehensive approach to propositional knowledge.

Zagzebski, we may recall, accepts the value of knowledge assumption, and she uses this assumption to evaluate reliabilist theories of knowledge. She argues that a reliabilist accounting of knowledge does not explain why it is valuable. Reliabilism says that reliable belief formation processes make the difference between items of (propositional) knowledge and other true beliefs. But, Zagzebski argues, reliable formation processes do not make their products more valuable than products originating from unreliable processes. According to reliabilism the distinction between knowledge and true beliefs which do not qualify as knowledge is, in fact, a distinction between true beliefs that are produced by a reliable process and true beliefs that are not produced by a reliable process. But, Zagzebski contends, this distinction is not one that makes a difference in the value of beliefs. Hence reliabilism cannot explain a difference in value between knowledge and other true beliefs.

I take Zagzebski's claim about reliable processes to be too broad. While reliability in a process *does not always* indicate value in the resulting process, reliability *is often* a very tight *indicator*, or even a *constituent* of cognitive contact with reality. The role reliability can play is perhaps clearest when we rely on external instruments for knowledge. For example, if one's thermometer is working properly, it will, other conditions met, bestow knowledge. A thermometer cannot do this if it is stuck on (what happens at the moment to be) the right

temperature. Nor can a thermometer bestow knowledge if the fact that it now reads the right temperature is merely a coincidence and the thermometer produces readings randomly. If the thermometer is to give us knowledge it must enable us to be in the right kind of contact with reality, and to do so it must be consistently responsive to thermal reality. In short, it must be reliable.

Of course, knowing what the temperature is requires more than a reliable connection between the temperature and the thermometer reading. Some agent must employ the thermometer reading in an appropriate way to form or regulate his beliefs about temperature. If for example, some novel reliable thermometer starts directly implanting temperature signals into my brain, my resulting beliefs would not count as knowledge, at least at first. While reliable mechanisms do not guarantee that my contact with the world is cognitive or intelligent, reliable connections are often an essential constituent of our cognitive contact with reality. The temperature knowledge we often have through thermometers is a good example; and this novel thermometer, with its novel type of output, could very easily become a means of cognitive contact with reality. We would simply have to learn how to use it to know the temperature and gain sufficient assurance that we can trust its outputs. With sufficient participation with the world that essentially involves these beliefs, and with sufficient integration with our other sources of knowledge, these temperature belief implantations would become a source of knowledge analogous to our bodily senses.

Much of our knowing has a structure similar to thermometer-based knowledge. Both perceptual knowledge and much knowledge that comes from other people requires us to rely on links that are external to us. The reliability of our senses and the reliability of information networks is indispensable to their role in giving us cognitive contact with reality. Knowledge often requires some mediated contact with the known. Often enough, the difference between mediated contact with reality and misleading evidence can be described as a difference in reliability. So, insofar as cognitive contact with reality is valuable, reliable processes *can* make their products more valuable.

But this does not vindicate reliabilism as *a comprehensive account of knowledge*. Reliability is both too broad a criterion and too narrow a criterion for this purpose. Reliability is too broad because reliable belief forming processes do not necessarily involve *cognitive* contact with reality. I posed one possibility above: a thermometer could feed appropriate signals into someone's brain, without bestowing knowledge. Critics of reliabilism often invoke similar scenarios where strange but reliable belief formation mechanisms bypass the believer's agency and intelligence. One can easily imagine fanciful examples involving neuroscientists, brain injuries with strange effects, or clairvoyance. These fanciful examples successfully refute reliabilism as an account giving sufficient conditions for propositional knowledge.

Still, it is helpful to think about more realistic examples. The point is that reliable mechanisms are only helpful when they put the agent, not just in mediated contact with reality, but in the right kind of mediated *cognitive* contact with reality. A realistic example might be someone who takes information from an online source he knows little about. This source is in fact reliable and trustworthy, but our agent does not have a good reason for trusting it. He does not have independent confirmation of the trustworthiness of the source or of anything he learns from the source. He does not understand in any detail or depth the matters the source discusses, and he is not responsive to any signs that this source is honest or biased, speaking knowledgeably or bullshitting, etc. This agent does indeed have some sort of mediated contact with reality, but it is not clear that it is appropriately cognitive, nor that it bestows knowledge. Deciding whether or not the agent knows any given proposition derived from the online source would require us to fill out lots of details and likely to assess differing intuitions. But it is clear, I think, that the case could be filled out to describe beliefs that are formed by a reliable process but do not count as knowledge. Reliability fails as a sufficient condition for propositional knowledge.

Reliability is also too narrow a criterion for knowledge. Reliability does not seem the right way to characterize all forms of cognitive contact with reality. For example, some things are known through a rational grasp or understanding. I might know that an argument form is

valid simply because I understand what validity is and I understand the particular argument form. This knowledge does not depend on me reliably recognizing instances of this argument form or on my ability to reliably assess argument forms in general. No doubt this kind of cognitive contact with reality will produce reliability with respect to some sort of beliefs, but reliability does not play the same role as it does in perceptual knowledge.

While reliability can be a key component of contact with reality, there are other forms of contact with reality that can explain propositional knowledge. Reliabilism diagnoses one way in which cognitive contact with reality can fail, and thus that propositional knowledge can be undercut. When we move from thinking about knowing some given proposition to thinking about what it is to know an object well, the limits of reliability become quite obvious. Reliable belief formation does not always get us even the minimal cognitive grasp of an object needed for propositional knowledge. Even when it grounds propositional knowledge, it does not necessarily mean we are familiar or fluent with the objects our beliefs concern. Propositional knowledge grounded in reliable processes might involve only minimal contact with reality and be of only minimal value. This depends on how the agent incorporates the reliable mechanism into his personal economy of knowing activities.

2.4 Taking stock

It is now time to pull together the various threads from the first part of this chapter. This review allows a more concise statement and prepares the way for discussing puzzles about my claims in the remaining sections of the paper. My most central claim is that the knowledge of objects is more fundamental than propositional knowledge, and thus that propositional knowledge needs to be seen and theorized within the context of knowledge more generally. It is unhelpful to theorize propositional knowledge as if it were the fundamental epistemic phenomenon that calls for our attention, or as if other forms of knowing were to be explained in terms of it. Rather the value and significance of propositional knowledge-- even knowledge of the very same proposition--varies greatly depending on how it figures into knowing objects or aspects of reality. When I speak simply of knowing objects, I construe the term broadly to include whatever aspects of reality an agent

might know, whether this is an equation of mathematics, a person, or a rock. Some objects might be propositional in nature; in section six, I say a little more about what I take the relevant objects to be.

I began with two issues that have been much discussed by philosophers theorizing propositional knowledge. Reflecting on these problems is helpful, I alleged, because we see propositional knowledge and, thus these problems, in the proper light when we look at them from the perspective of object knowledge. The Gettier problem has been a pervasive topic in epistemology for the last half century. It arises from the fact that it is possible to appropriately believe a proposition on some misleading basis. Human knowledge is fallible, which is to say that it is possible for us to be wrong, even about matters where we have every indication that we actually know. This means that we at times believe false claims in a way or on a basis that would normally be adequate to give us knowledge of those claims. We can have false beliefs that we appropriately take ourselves to know. In these cases, the normal connection between the *basis* on which we take ourselves to know some something and the *thing or claim* we take ourselves to know is missing. Gettier cases occur when the normal connection between the *basis* of taking ourselves to know and *what* we take ourselves to know is missing, *but the belief in question happens to be true*.

In one sense, Gettier cases are not relevantly or interestingly different from cases of appropriate false belief. But they have had pervasive influence because they refute attempts to define knowledge by simply requiring *both* that the agent believe appropriately *and* that the belief is true. Gettier cases show that there must be the right sort of connection between the basis that makes the belief appropriate and the reality that is known. I do not offer a definition of what that connection must be. In fact, I am a sort of pluralist about that. I think there are a great variety of ways in which that connection can go. Most approaches to theorizing knowledge, for example reliabilism and evidentialism, capture a way that the connection can go. However, they fail to describe all the ways a knowledge bestowing connection could go. What I do instead is offer general terms for thinking about appropriate bases of belief and for thinking about ways agents may be epistemically connected with reality.

The key notions for thinking about these connections are those of manifesting and of cognitive contact with the known. Consider some candidates for what makes belief appropriate, i.e. for what makes it appropriate to take ourselves to know something. These include perceptual experience, evidence from which we can make inferences, reliable processes of belief formation, etc. Normally these things make manifest some aspect of reality. The perceptual experience that makes me think I am seeing and touching a red ball normally makes manifest some ball with the relevant properties of hardness and light reflection. Expert testimony normally makes what the expert testifies about evident to the listener. When this manifestation relation is as it should be the agent is in cognitive contact with the reality that is manifested.

Most channels of cognitive contact with reality are mediated. This should not be surprising, since we are embodied and social agents. Our cognitive contact with reality often relies on our connections with other people, and it almost always depends on our bodies. Often it further depends on instruments we use. I take it that these forms of mediation very often enable cognitive contact with the known because they serve as manifestations of the known that intelligent agents can receive. Different forms of mediation and different ways of receiving manifestations of reality result in differences in *how well* the agent knows the known. This is discussed more in later chapters, especially with regard to the notion of *participating-with* the known. What is relevant here is that some mediation involves linkages that are much more liable to going wrong than others. In these cases, Gettier problems can arise quite easily. On the other hand, where the same object is manifested through various types of mediated contact, and where the agent is actively engaged with the known, susceptibility to Gettier cases is much lower, as illustrated by the TABLE case. If I do not know the known very well, it is easy to imagine a Gettier case where everything seems the same to me, but I am not actually in contact with reality. If I know the known more thoroughly, a corresponding Gettier case is still possible, but it is much less likely.

Thus, my diagnosis of Gettier problems leads to a shift of focus from propositional knowledge to the knowledge of objects. What is most central is not seeking necessary and

sufficient conditions for when an agent knows *that* some proposition is true. Rather, what is central is considering *how well* an agent knows the object or aspect of reality in question. Propositional knowledge often relies on a fragile or limited cognitive contact with reality. Once we are attuned to assessing how well one knows an object, we can then explore the various forms that intelligent contact with reality may take. While this exploration will be helpful for thinking about what beliefs count as knowledge, it will, perhaps more importantly, also help us to think about forms of knowing that are not easily pushed into the mold of knowing *that* some proposition is true.

The notion of cognitive contact with reality is also key to my characterization of the value problem. The value of propositional knowledge depends on how it figures into knowing objects. I describe the value of knowledge in terms of cognitive contact with reality. While intellectual states can have various kinds of value, the value that is *distinctive of knowledge* derives from being in cognitive contact with some aspect of reality. This particular value will be lacking in Gettier cases and cases of appropriate false belief (with regard to the aspect of reality that we wrongly take ourselves to know). The value of knowledge varies depending *how well* one knows the object in question. Also, though I have not argued the point in this chapter, this dependence on being in contact with reality explains how the value of knowledge can vary with the value of the known.

While I have argued that there is a distinctive value of knowledge, this claim is restricted in two ways. First, some items of propositional knowledge may indeed have a very minimal value overall. Second, some beliefs that are not knowledge may have more value than other beliefs that are knowledge. These two restrictions follow naturally from the fact that propositional knowledge does not always require much by way of knowing objects, together with the fact that not all objects of knowledge are equally valuable. In turn, these limitations on what can be claimed about the value of propositional knowledge explain why the value problem is a vexing problem, that is, why the distinctive value of many instances of propositional knowledge seems non-obvious and less than impressive.

My discussion of reliabilism in section three illustrates how I think about theories of propositional knowledge within the context of object knowledge. Rather than examining a specific, spelled out, reliabilist account, I considered what role reliability could play in such a theory. My conclusion is that reliability, or its lack, often does affect cognitive contact with reality and thus often affects whether a belief is knowledge and whether it has the value distinctive of knowledge; but reliable belief forming mechanisms do not always result in knowledge nor are they the explanation for all instances of knowledge. For this reason, I am suspicious of theories of knowledge that make reliable belief forming mechanisms either necessary or sufficient for knowledge. I suspect this pattern generalizes to many other criteria employed in attempts to give accounts of propositional knowledge. Properties like coherence, good evidence, properly functioning faculties, etc. are likely possible modes of cognitive contact with reality without yielding either necessary or sufficient conditions for knowing.

I have cast objects or aspects of reality as what we primarily and centrally know. While I do not deny that we know propositions, I have insisted that knowing propositions is *a* way of knowing the objects or aspects of reality they describe. It's significance as knowing depends on such object knowledge. In the remaining sections I explain this conclusion a bit further by addressing two sets of questions. The first set concerns what is meant by saying that knowledge of objects is more "central" or "fundamental" and whether this applies to all instances of knowing. These questions then lead to the second set of questions which concerns what exactly the relevant objects of knowledge are.

2.5 What does it mean to say that knowledge of objects is more fundamental?

I claim that knowing objects is more central and fundamental than knowing propositions about objects. What does it mean for something to be more fundamental and central than something else? This question is particularly pressing because I claim that knowing objects is more fundamental in various ways, and these ways may seem disparate rather than unified. Object knowledge is both *fundamental in importance* and *fundamental in the order of explanation*. Further, this fundamentality is expressed both in the way that

knowledge of objects enables propositional knowledge and in the way that *propositional knowledge serves the knowledge of objects*.

This set of characteristics may not seem to fit together. Out of the set we can create two somewhat familiar pairs. (1) If A is more fundamental in importance than B, then it is not surprising if B serves A in some way. Alternatively (2), if A is more fundamental in order of explanation, then it is not surprising if A somehow enables B. The problem is seeing how the priority of object knowledge can involve both pairs. Simple or familiar ways of cashing out the relation of one thing's being more fundamental than another may not work.

One familiar way of thinking about such relationships is in terms of components or constituents. As a simple example, consider the relationship between blocks and a (block) wall. A wall is composed of more basic elements like blocks. In one sense these elements are more fundamental than the wall. They make up the wall and the properties of and the relations between the blocks and other elements of the wall explain the existence and nature of the wall. These blocks are more fundamental with regard to at least one type of explanation. This explanatory fundamentality is exhibited by the fact that the blocks *enable* the wall to be what it is. Blocks seem more fundamental than walls with regard to the second pairing of characteristics.

But fundamentality of importance seems to come in the opposite order and exemplify the first pair of characteristics. It is the wall that is more important than the blocks. The blocks were made to build walls and they were placed as they are in order to build the particular wall they are components of. The blocks are for the sake of the wall, which is more fundamental in importance than the blocks which compose it. The fundamentality of importance is exhibited by the fact that the blocks *serve* the wall rather than the wall serving the blocks.¹⁸

When I say that knowing objects is more fundamental than knowing *that* some claim is true about those objects, I have in mind a fundamentality that exhibits both pairings. Object knowledge is fundamental both in that propositional knowledge *serves* or *is for the sake of*

¹⁸ Of course, this is only an example to illustrate a way of thinking about what it means for one thing to be more fundamental than another. I am not making settled claims about the metaphysics of walls.

knowing objects and in that object knowledge *explains* or *enables* propositional knowledge. To make sense of this we need to go beyond the simple component metaphor illustrated by blocks and a wall. This involves a trapeze through various notions related to fundamentality and centrality. This includes the notion of final causality, the notion of good results manifesting the goodness of what produces them, and the notion of a first thing—second thing relationship described by Steven Brubaker.

To begin with, note that in one respect the wall does explain the blocks. The wall is the proximate final cause¹⁹ of both the blocks and their combinations. The blocks are made as they are so that they will make good walls and they are joined as they are so that they form the kind of wall that is needed. Perhaps what it is to be a “block” in the relevant sense is conceptually tied to walls. Still, I want to say more about how knowing objects *explains* or *enables* propositional knowledge than the wall analogy seems to offer.

Organic analogies are more helpful. Plants produce and so enable seeds, but seeds are for the sake of and so subservient to plants. A seed manifests the nature and the health of the plant that produces it. Plants produce seeds after their own kind and producing seed, good seed at any rate, requires some level of health and flourishing in the plant. Seeds only come from their own kind and from something alive. The notion of manifesting also applies to the relationship between object knowledge and knowing claims about the object. Good descriptions manifest an agent’s knowledge of the object they describe. The agent’s contact with reality explains why his beliefs are knowledge and why he forms knowledgeable beliefs. Propositional knowledge also serves the knowledge of objects. It gains its significance from the contact with the object it involves, and it often facilitates greater cognitive contact with the object in question (I am not minimizing the power of good descriptions!).

To say that knowing objects is more fundamental than knowing propositions that describe those objects has both a practical and theoretical upshot. It has a practical upshot in that our actual intellectual practices can be, and not infrequently are, distorted by treating

¹⁹ I say proximate final cause, because the wall will be evaluated by its role toward other final causes such as a house or the human purposes the wall is supposed to serve.

propositional knowledge as valuable in a way that floats free from how well one actually knows the object that the proposition concerns. This is a common complaint and warning in the literature on pedagogy. Educators are often urged to use practices that involve the student more fully with the to-be-known reality rather than practices which simply aim to maximize the number of true propositions a student can reproduce.

My claim also has a theoretical upshot, and this is what I have focused on in this chapter. We can better understand propositional knowledge when we consider it with reference to knowing objects. To try to understand knowing objects simply in terms of knowing that certain statements about them are true distorts our epistemology. Construing phenomena like understanding and knowing how simply in terms of knowing the right set of propositions keeps us from giving proper place to such epistemic phenomena. Knowledge of objects is the proper context in which we must situate knowing propositions if we are to think well about propositional knowledge as well as other modes of knowing, including but not limited to, understanding and knowing how. If we reverse the matter and try to think about knowing objects within the context of knowing propositions, we invite confusion.

One helpful model for thinking about this sort of priority is the first thing-second thing relation described by Steven Brubaker. This model is “an attempt to illustrate the proper relationship between two beliefs, ideas, or values that should not be separated, but in which one should provide an *anchor*, a *focus*, and a *context* for the other (emphasis mine).”²⁰ In a first thing-second thing pair, the first thing “has a place of priority, focus, and emphasis.”²¹ Brubaker describes three ways the first-thing second-thing relation can be distorted. These are *reversal*, *confusion*, and *separation*. If we reverse first and second things, we make the second thing more important and more fundamental than the first thing. If we confuse first and second things we equate them or fail to adequately distinguish them. If we separate first and second things, we end up dismissing second things as unimportant or unnecessary for the first thing.

²⁰ Steven Brubaker, *A Mennonite Thinks About Knowing* (Guys Mills, PA: Faith Builders Educational Programs, 2014), 7.

²¹ Brubaker, 8.

Brubaker applies this model to various pairs. Before going to epistemology, I will illustrate with the relationship between love and loving deeds. This is adapted from his more general characterization of being good as a first thing and doing good as a correlative second thing. Loving a person is more fundamental than performing a particular act by which one loves. This is evidenced by the fact that the deed is done in order to love the other person (the lesser serves the greater). And, it is also evidenced by the fact that the loving deed is enabled and comes from love for the person (the greater enables the lesser). So, loving the person provides “an anchor, a focus, and a context” for the deeds that love calls for. *Reversing* the relation would give the particular deeds pride of place and would see love as a way of motivating the kinds of actions that love calls for. *Confusing* love and loving deeds might result in a continued emphasis on love but with a failure to see that love is anything beyond performing the deeds which love calls for. One who *separates* love and loving deeds would continue to give lip service to the importance of love, but he would fail to see that not performing the actions love calls for is a failure in loving.

Turning back to epistemology, this model is helpful for thinking about the relationship between knowing objects and knowing descriptions of those objects. Knowing descriptions comes in the context of knowing objects, and knowing objects is the anchor and focus. Even if I know the table in no other way than through receiving testimony that it is brown, *someone* has to have an encounter with the table to ground my knowledge. And, if I know that the table is brown, I know the table in some way, however minimal.

The model also well describes misunderstandings of the relation between objectual and propositional knowledge.²² If the two are confused, knowing an object might be equated with knowing a certain set of propositions concerning it. This would deny the significance of the distinction between knowing objects and knowing claims about the object. Reversal would mean treating knowing claims as the fundamental context within which to understand knowing objects. It is hard to imagine what this would be. Some philosophers would contend

²² In epistemology Brubaker uses this model to relate two notions of truth. He treats truth as substance (truth as reality) as a first thing and truth as description as a second thing. This distinction is for him logically prior to the distinction between knowing descriptions and knowing objects in a fuller way.

that we do not know objects, we only know things about them. This denial does not exactly reverse the relations between the two kinds of knowing, it just recharacterizes our contact with objects as something other than knowledge. Separation would mean denying that the second thing, namely knowledge of claims or descriptions, is needed or important for the first thing, namely knowledge of objects. Separation would characterize knowing simply as encountering some aspect of reality without any essential role for explicit description or for seeking justified beliefs about the object.

2.6 What are the objects of knowledge?

In the previous section, I have often spoken of generalized relations between knowing objects and knowing that objects have certain properties. I have described the relationship between propositional knowledge and object knowledge and argued that knowing objects is more fundamental than knowing propositions. I have suggested that propositional knowledge is for the sake of object knowledge and that object knowledge enables propositional knowledge. I have gestured at what the objects are that we know. I have said, for example, that they include such things as equations of mathematics, persons, or rocks, and I have admitted that some objects can be propositional in nature. But that leaves a lot of questions unanswered. Here I briefly address three issues. First, it seems there are cases where what is sought is knowledge of some proposition independent of any more robust knowledge of the relevant objects. Second, it seems that often what we are most interested in is not the knowledge of particular objects, but more general truths about classes of objects. Finally, sometimes object knowledge concerns things that are propositional in structure.

We often try to know an object better in order to answer some question about it, and in some cases this may be our only objective. So, for example, one might investigate an oak beam simply in order to ascertain whether it will hold a given load. The sole purpose of some person's investigation of this oak beam might be to assure himself *that* it will hold load x. This knowledge takes propositional form and does not seem to be for the sake of any further knowledge of the beam. In many learning situations, acquiring descriptions (that constitute knowledge) from another person, or formulating descriptions ourselves, would be part of a

learning process of coming to know oak or some other relevant aspect of reality. But we can stipulate situations where any concern for broader knowledge is minimal, and where cognitive contact with the known is quite sparse, as, for example, when we learn such isolated facts by testimony.

There are several things to say about such cases. First, if a knower genuinely grasps a claim and knows it to be true, that grasp involves cognitive contact with the object and not just the proposition, however minimal that contact may be. If the grasp is *only* that this beam will support a specific number of pounds, which number can be written on a test paper, the knowledge is so minimal as to be negligible. But, as a matter of analysis, I take this minimal contact with reality to be what explain why the belief amounts to knowledge, even if, from a practical standpoint, rating the veracity of the proposition is all that matters. Second, what the knower is primarily concerned to know may not be oak but some other reality such as the structure in which this beam fits or even something more general like construction principles. The proposition may be significant as part of knowing *that* object even if relatively insignificant with regard to knowing oak.

The second issue concerns the tension between describing the objects we seek to know as particular or concrete objects and describing them as something more general like patterns, structures, regularities, principles, etc. In the context of the oak beam example, one naturally wonders whether the primary object of knowledge is some particular beam or something more general like oak. Both are possible objects of knowledge, and the knowledge of the one is related to the knowledge of the other. Knowing the particular provides a path to knowing the universal, but not a straightforward one. Any oak beam will have idiosyncrasies; one can generalize some aspects of *this* oak beam, but not all aspects of it will generalize to oak in general. It is worth noting that this specific versus general question occurs at multiple levels. Just as we can contrast knowing one particular tree with knowing that species of tree, so we can contrast knowing a particular species with knowing trees in a more general way, or knowing trees with knowing plants more generally. There is a tension between the objectives of depth and breadth in craft knowing and in a wide range of intellectual pursuits.

In chapters five and six, I speak of working with particular things as ways of knowing them in their particularity, but I also speak of knowing particular things as ways of knowing something broader. I know construction by constructing some particular building, but my work of construction is a way of knowing particular things rather than just having an abstract and general knowledge of construction principles. Since I construe objects quite broadly, I see both particular things and broader aspects of reality as suitable objects of knowledge, and, for any relatively full sort of knowledge, the two will be closely linked. Survey-style facts can provide some knowledge of a universal. I might read that oak is hard, slow to rot, and quick to split. Experience with a particular piece of oak might lead me to conclude that oak lacks one or more of these properties. This might tempt us to conclude that knowledge of oak is only an aggregation of knowledge of particulars. Or it might tempt us to conclude that particular timbers are irrelevant to knowing oak. Yet there seems to be a two-way street between knowing particulars and more general aspects of reality like principles, patterns, etc. To know something like oak to any significant degree demands knowing some particular oak things; but knowing an oak thing, at least in its oakness, requires knowing oak in some way.

With regard to the last issue, when it comes to knowing relations among particulars and to knowing broader aspects of reality, it is often natural to treat these relations and structures as propositional in form. This need not be a problem. For propositions themselves can be objects of knowledge and perhaps some important parts of reality have propositional structure. But even where the object of knowledge is propositional in structure, the emphasis I advocate differs from the standard approach to propositional knowledge. The focus is not on knowing *that* the proposition is true but on knowing the proposition. It is one thing to know *that* $e^{i\pi} + 1 = 0$ or *that* the sum of the squares of the legs of a right triangle equal the square of the hypotenuse. It is another thing to know those equations well as important aspects of reality. So, knowing $e^{i\pi} + 1 = 0$ is not merely knowing *that* $e^{i\pi} + 1 = 0$. Similarly, to know *that* $a^2 + b^2 = c^2$ does not entail that one knows the underlying reality in the way someone does who grasps the geometric structures involved and understands various proofs of the

theorem. The fact that things with propositional structure can count as objects does not destroy the conceptual distinction between knowing propositions and knowing objects.

2.7 Conclusion

This chapter serves two primary purposes in the structure of the dissertation. The first is to motivate and argue for the claim that accounts of propositional knowledge are not fundamental and should not be seen as comprehensive or as paradigmatic for thinking about other kinds of knowing. The second purpose is to introduce and motivate an approach to thinking about knowing that focuses squarely on knowing objects. Both of these tasks prepare the way for talking about craft as knowing. But there are a number of steps before the direct discussion of skilled physical work of scope as valuable knowing. The two steps that most directly follow up on this chapter come in chapters three and five. Chapter three explores forms of knowing that differ from propositional knowledge, including discussions in contemporary literature and a concept from Aristotle. Chapter five explores the role of participating with objects in our knowledge of them. Such participation comes in a variety of forms that facilitate various kinds of cognitive contact with the known.

3 Other Epistemic States

This dissertation concerns the value of craft as knowing. That is to say, I am seeking to understand the knowing that goes on in skilled physical work of scope and to assess its significance. This means clarifying the sense in which the *activities of physical work* are or can be *knowing activities*. I understand this to be a question of how such activities put us in cognitive contact with reality. As described in chapter one, one source of skepticism regarding craft as knowing is the way knowing is often construed with two narrow a focus on *description* and *propositional knowledge*. By contrast, the activities of physical work tend to be long on doing things and short on describing things. In the previous chapter I argued that propositional knowledge or *knowing that* is best seen as secondary to knowing objects or aspects of reality. One upshot of that claim is that we do well to pay attention to other epistemic states that are not focused on description or on knowing particular claims about the relevant aspect of reality.

This chapter examines several intellectual states other than propositional knowledge. I discuss two of these, namely understanding and knowing how, in terms of the contemporary philosophical literature. I also examine the ancient discussion of intellectual virtues found in Aristotle's *Nicomachean ethics*. Aristotle discusses five excellences of thought that he says are forms of "truthing" (I explain why I use this awkward term later). Not all these intellectual states are considered forms of knowledge by those that write about them. However, I consider them to involve cognitive contact with reality, and so I treat them as modes of knowing.

We know various aspects of reality through richly varied ways of making cognitive contact with the known. Thinking about understanding, knowing-how, and Aristotelian truthing helps to expand our picture of how knowers can and should be in cognitive contact with the known. These discussions reveal important insights regarding the forms of contact with reality that are needed for excellence in knowing. In particular, they reveal interesting ways that knowing is tied to our agency and abilities. This includes connections to virtuous action, to physical skills, and to skill in formulating and evaluating propositions. Knowledge

often involves activities wherein the agent participates with the known. Knowing by participating-with is not thematized until chapter five, but the discussion in this chapter points in that direction.

Examining these forms of knowing also advances my consideration of the value of knowledge. The authors I engage with in this chapter make arguments concerning both *what kinds of cognitive contact* with objects are particularly important and concerning *which objects* are particularly valuable to be in cognitive contact with. Other things equal, knowledge of a more valuable object is more valuable than knowledge of a less valuable object and a fuller knowledge of the same object is more valuable than a lesser knowledge of that object. However, Aristotle in particular construes the value of knowledge in a way that calls into question the significance of both the objects known through physical work and the kinds of cognitive contact with reality that work involves. Few share Aristotle's precise view of these matters, but many common ways of thinking about knowing raise analogous barriers to appreciating the intellectual value of work. Aristotle's views regarding the value of knowledge figure into chapter four which concerns the structure of ends, which is to say the relationships among various goods and goals.

This chapter proceeds as follows. In section one I discuss understanding with attention to its treatments by Zagzebski, Kvanvig, and Talbot Brewer. Section two concerns knowing-how as discussed by J.C. Ryle and others who have responded to his work. Section three draws together threads from these two discussions and sets up the transition to the discussion of Aristotelian truthing, which occurs in section four. Section five concludes with a few words about how the intellectual states discussed here will figure into the account I develop in chapter five.

3.1 Understanding

Most epistemologists would agree that understanding is an intellectual state or activity that involves a more robust grasp of its objects than what would be required simply to have propositional knowledge about those objects. This is spelled out in various ways. Two factors have motivated epistemologists in recent decades to pay attention to understanding. One

motivation comes from the history of philosophy. Some scholars have argued that it is understanding, not propositional knowledge, which best matches the conception of knowledge seen in Plato and Aristotle.²³ (And in the latter part of this chapter I discuss Aristotle's treatment of intellectual excellences in the *Nicomachean Ethics*.) The other motivation for paying attention to understanding comes from the value problem. As a result of difficulties explaining what the distinctive value of (propositional) knowledge might be, some have argued that the intellectual state which is actually distinctively valuable is understanding. This second motivation is not entirely disconnected from the first, since the value problem has often been compared to a discussion in Plato's *Meno* (97a-99d). There, Socrates and Meno consider the possibility that human life is directed just as well by true opinion as by knowledge. As a result, the value problem is sometimes called the Meno problem. If the value problem is put in terms of understanding, this may bring it a little closer to the terms of the discussion in Plato's *Meno*.

Understanding implies a somewhat comprehensive grasp of what is understood and requires a grasp of some relevant relations. To understand something, one must know more than a few isolated things about it. The objects of understanding cannot be simply brute; they must admit of being understood. But what sorts of things can be understood? What about particular physical objects? Fundamental laws of nature? Concepts? Universals? Sets of propositions? These questions are contentious. Rather than saying more here, I make a few comments at the end of this section after discussing particular approaches to understanding.

I look at treatments of understanding by three philosophers. The first two, Linda Zagzebski and Jonathan Kvanvig, pioneered contemporary treatments of understanding within contemporary epistemology. Their accounts are discussed in sections one and two, respectively. The third section takes up Talbot Brewer's approach to the notion of understanding. Brewer approaches understanding from the perspective of ethics, specifically through an attempt to understand the human goods and telos of theoretical reflection.

²³ The three authors I discuss all mention the work of Julius Moravcsik in particular. "Understanding and Knowledge in Plato's Philosophy," in *Neue Hefte Für Philosophie* 15/16, 1979, 53–69.

3.1.1 Zagzebski on understanding

In a 2001 essay, Zagzebski argues that philosophers need to recover the concept of understanding.²⁴ As she summarizes the history of philosophy, understanding was the dominant intellectual value when epistemology was not dominated by skeptical concerns, whereas certainty was the dominant intellectual value in periods where epistemology was dominated by skeptical concerns. Zagzebski identifies the Hellenistic period and post-Cartesian philosophy as the primary episodes where skepticism has been taken as a serious threat. These periods saw an epistemological emphasis on justification and propositional knowledge in keeping with the goal of certainty. Other periods of philosophy such as the time of Plato and Aristotle and the medieval period saw an epistemological emphasis on explanation in keeping with the goal of understanding.²⁵ Knowing propositions is not the same thing as certainty, nor is giving explanations the same thing as understanding. The ability to give explanations is not an infallible indicator of understanding, nor does justification infallibly indicate certainty.²⁶ Still, Zagzebski takes there to be a close and natural connection between the dominance of certainty as the epistemic goal and a focus on justification, and between the dominance of understanding as the epistemic goal and a focus on explanation.

Zagzebski herself distinguishes understanding from knowledge, but she notes that philosophers, such as Plato, have come close to identifying knowledge with understanding, while others, such as Descartes have come close to identifying knowledge with certainty. So, one's conception of knowledge changes depending which value is emphasized.²⁷ I believe that what Zagzebski says about Plato and knowledge can be seen in Plato's portrayal of Socrates. Socrates is portrayed as certain of many things, some of them things of great import, but he still insists he does not have knowledge. This lack of knowledge is shown by his inability to

²⁴ Linda Zagzebski, "Recovering Understanding," in *Knowledge, Truth, and Duty: Essays on Epistemic Justification, Responsibility, and Virtue*, ed. M. Steup (Oxford University Press, 2001).

²⁵ Zagzebski, 237.

²⁶ Zagzebski, 239.

²⁷ Zagzebski, 237.

give adequate accounts or explanations. So, as Zagzebski says, Plato seems to think of knowledge, not as being certain that some claim is true, but as intellectually grasping or understanding the known.

Zagzebski approaches the concept understanding through three main ideas. First, following Plato, she connects understanding to the mastery of some *techne*—the Greek term for a craft or skill. For Plato, mastering a *techne* requires understanding the nature of the product it aims at, being able to explain one's actions, knowing the good, and, of course, being able to act from the *techne*, skillfully and reliably producing the relevant result. Therefore, understanding involves knowing how to do something and the ability to explain what is understood. Understanding indicates that a person is competent.²⁸ The second main idea is that understanding involves seeing how what is understood fits into a larger field. One cannot understand an object or particular aspect of a field without being able to relate it to a larger framework and to other parts of the field. In fact, understanding is not really “directed toward a discrete object” and certainly not toward a “discrete proposition” because it involves seeing relations between parts and perhaps between parts and wholes.²⁹

Zagzebski puts particular emphasis on the third main idea: She says that “understanding is the state of comprehension of non-propositional structures of reality.” She cites things like “an automobile engine, a piece of music, a work of art, the character of a human person, the layout of a city, a causal nexus, a teleological structure, or reality itself” as examples of entities with non-propositional structure.³⁰ She does not insist that such entities cannot be represented propositionally but rather that “the proposition is not the only form in which reality can be made intelligible to the human mind.”³¹ These non-propositional structures for understanding reality occur in many fields—including in philosophical theorizing. Zagzebski cites the famous metaphors in analytic epistemology of the raft and the pyramid. Such metaphors or models are attempts to grasp some aspect of reality in a way that

²⁸ Zagzebski, 240–41, 245.

²⁹ Zagzebski, 241.

³⁰ Zagzebski, 242.

³¹ Zagzebski, 242.

is non-propositional. Different models could, at least in principle, give equal understanding of the same aspect of reality which they represent in different ways.³²

Obviously, if understanding is about non-propositional ways the world can be intelligible to us, then understanding will neither be a species of propositional knowledge nor be composed of propositional knowledge. Zagzebski goes further and denies that understanding is a form of knowledge. Since I treat understanding as a form of knowing, it is important to look at her reasons for denying this, though the difference may turn out to be mostly terminological. Her explanation of how she takes understanding to differ from knowledge clarifies her view of understanding.

Knowledge is oriented toward and defined by the goal of truth, which she considers a *thin* epistemic goal. Understanding is a *thicker* goal with a connection to truth that is “often indirect.”³³ While understanding, in an important sense, goes beyond or is more advanced than knowledge, it does not always exactly require knowledge. The sense in which understanding goes beyond knowledge is that it makes a person an expert. Such a person is most likely a reliable problem solver in the relevant domain and usually a good source of true propositional information, but her reliability extends beyond giving correct information. Her problem solving is enabled by her “understanding of a complex chunk of the world,” and not simply by knowledge or beliefs that are *about* that chunk of the world.³⁴ In the case of mathematical proof, understanding involves “seeing the relations between the propositions, and that is not itself the knowledge of a proposition.”³⁵ Understanding a proof is more than knowing the proof or about the proof. Understanding is also a feature of a person that makes him reliable in working with what he understands. For example, understanding may enable one to “produce a flakey pastry, repair an automobile, design a bridge that will not collapse, or figure out why the vintner fails this year.” Understanding is a property of a person not to be confused with their propositional knowledge *about* what they understand.³⁶

³² Zagzebski, 243–45.

³³ Zagzebski, 245.

³⁴ Zagzebski, 245.

³⁵ Zagzebski, 244; citing Julius Moravcsik, “Understanding and Knowledge in Plato’s Philosophy,” 55.

³⁶ Zagzebski, “Recovering Understanding,” 245.

Understanding is not just a higher grade knowledge. While understanding often “deepens our cognitive grasp of what is already known,” it “does not always build on a base of knowledge.”³⁷ For example, theories (scientific or otherwise) represent reality, but some do it well and some do it less well. Accuracy and adequacy are matters of degree and it is possible that rival theories will be equally accurate and so competing theories could both provide a good degree of understanding. This feature of understanding is supposed to contrast with knowledge. Zagzebski implies that knowledge differs from understanding in that “two competing representations of the same part of reality cannot both constitute knowledge.” The other contrast she adduces between understanding and knowledge is that strict truth can get in the way of understanding. Scientific laws are presented as idealizations to facilitate understanding, but these idealizations do not give us the strict truth about physical reality.³⁸

Understanding and knowledge have divergent aims. Knowledge, and would be knowledge, is primarily concerned with truth and falsity. Understanding is evaluated by a different criterion. It does not need to be exact, but it does need to be comprehensive. It may require simplification of the truth, and it may require “highlighting certain features and ignoring others.” Knowledge and truth are goals that do not encompass the good sought by understanding. Also, Zagzebski wants to cast understanding as being less vulnerable to skepticism than knowledge. This is another reason she only loosely connects the good of understanding with knowledge and truth. She does not want to “take for granted that the object of understanding is also something known or even that it is true.”³⁹ Similarly, the idea that understanding does not require knowledge plays a large role in Kvanvig’s account as will be seen below.

Despite these objections, I treat understanding as a form of knowing and I take theories of understanding to illuminate aspects of what it is to know something well. If we take knowing as primarily and fundamentally a certain kind of relation between the knower and the known, and if we allow that relation to come in a variety of forms, then (at least most)

³⁷ Zagzebski, 244.

³⁸ Zagzebski, 244.

³⁹ Zagzebski, 244–45.

understanding constitutes knowledge of some aspect of reality. She does admit that understanding (or would be understanding) can vary in *accuracy*.⁴⁰ This variation in accuracy I would associate with variation in how well one knows the object of understanding. One can know an aspect of reality well or not as well.

Of course, there can be a state very much like understanding that is not based on knowledge. I might, in some sense, understand a hypothetical scenario—or a scenario that I wrongly think is actual. I discuss this possibility more extensively below in my response to Kvanvig’s theory of understanding. Here I make two summary points. First, to say that understanding is often a form of knowing does not commit me to saying that every instance of understanding is an instance of knowledge. Second, these cases of what seems like false understanding will usually involve a correct or accurate grasp of *some* dimension of reality. For example, I might “understand” the problem I think my car is having, but it actually has a different problem with similar symptoms. In such a case, I do not have the relevant knowledge with regard to what is wrong with my car. However, such understanding must involve some accurate grasp of how my car functions, or at the very least some grasp of the principles of mechanics that dictate how my car *could* function. Again, I say more about this below in response to Kvanvig.

Whether or not understanding involves significant mistakes, the object that is known may be quite broad. Understanding can be of particular things, but it will include either internal patterns or systems within those particular entities, or patterns or systems in which the particular entity figures. Understanding an automobile engine, to consider one of Zagzebski’s own examples, involves knowing the engine to some degree and in some aspects. It may also involve knowledge of thermodynamics, fluid dynamics, metallurgy, and of course, all sorts of principles of general mechanics. It can also involve, and usually must involve, knowledge of function and purpose. The engine as a whole is intended to provide power for various purposes, and components are intended to further the various functions and goals of the engine. Without such knowledge an engine is unintelligible. This is not to say understanding

⁴⁰ Zagzebski, 244.

must involve all of these fields of knowledge. Understanding comes in a host of partial forms focusing on different aspects of the reality in question. The knowledge need not be explicit, much less propositionally explicit. The point is rather that understanding involves knowing widely varied aspects of reality, and this is true even when understanding involves mistakes about some part of what one thinks one understands.

3.1.2 Kvanvig on understanding

Kvanvig's account of understanding differs from Zagzebski's in significant ways.⁴¹ For my purposes the two most significant differences concern his characterization of the objects of understanding and the extent to which he separates understanding from knowledge. Zagzebski does deny that understanding is a species of knowledge, as noted above, but Kvanvig's thesis seems more radical since he insists that we can understand something even when our cognitive access to it comes exclusively through Gettiered beliefs. In contrast to Zagzebski's statements that the objects of understanding can include concrete objects like car engines and that understanding often manifests in ability, Kvanvig describes the objects of understanding as bodies of (presumably propositional) information. Kvanvig also differs from Zagzebski in that he takes understanding how to do something to be a peripheral use of the term understanding, at least with regard to epistemological concerns.⁴² Fixing an engine or making a good pastry are not paradigm manifestations of understanding for Kvanvig.

Like Zagzebski, Kvanvig suggests that a preoccupation with (propositional) knowledge rather than understanding or wisdom cedes too much attention to skepticism. Skepticism is primarily a challenge to knowledge rather than wisdom or understanding. Kvanvig suggests that this deference to skepticism shows up in the approaches of philosophers who pursue epistemological inquiry not concerned with explaining the error of skepticism. Even those who seek to fundamentally rethink epistemology are not immune. As a prime example, he cites virtue epistemology. While in ethics some virtue theorists tried to shift the focus of ethics from concepts like right and wrong to virtue concepts, virtue theorists

⁴¹ As given in his 2003 book, *The Value of Knowledge and the Pursuit of Understanding*.

⁴² Kvanvig, 190.

in epistemology have not followed suit. Virtue epistemologists rather have tended to treat intellectual or epistemic virtues as tools for defining familiar notions, such as justification, that are motivated by concerns to answer skepticism. Kvanvig suggests that a genuine virtue approach to epistemology would result in significant focus on other intellectual goods like understanding and wisdom—though not to the exclusion of reflection on knowledge or justification.⁴³ The theme of radical virtue epistemology is pressed further by Brewer, as will be seen below.

The value problem, which Kvanvig connects to Plato's *Meno*, is a significant motivator for Kvanvig's treatment of understanding. Like Zagzebski, Kvanvig notes that Plato's use of the word "knowledge" (as *episteme* is usually translated) is more akin to our notion of understanding than to the contemporary notion of knowledge.⁴⁴ Kvanvig's overall take on the value problem is that (propositional) knowledge does not in fact have a distinct value but that understanding does. Or to put it another way, the value problem is insoluble if it is taken to concern knowledge, but it can be solved if it is taken to concern understanding.

I discussed Kvanvig's arguments regarding the value of knowledge in chapter two. I briefly re-present the relevant line of reasoning here. What Kvanvig means by denying that knowledge is distinctively valuable is that there is no value that is *always present* in beliefs that amount to knowledge and is *never present* in beliefs that do not amount to knowledge. Knowledge often or always includes certain valuable components such as displays of intellectual virtue, subjectively justified belief, and true belief. However, there can be beliefs that do not count as knowledge which include all of these components. Kvanvig takes Gettier cases to show that some beliefs that include these valuable properties do not qualify as knowledge. Kvanvig thinks that any account of knowledge that rules out Gettier cases will require that knowledge includes some component property that *fails to make knowledge more valuable than a corresponding belief that lacks that component*. This entails that knowledge is not distinctively valuable as compared to certain Gettiered beliefs. Specifically, Gettier cases

⁴³ Kvanvig, 186–88.

⁴⁴ Kvanvig, 185, 193.

involve luck that undermines knowledge. So it is a condition on a belief's being knowledge that it avoid such luck. But Kvanvig does not think that the kind of luck that must be avoided is any more dis-valuable than other forms of luck that are quite compatible with knowledge. So, he says, knowledge is not always more valuable than any of its proper subparts.

Understanding, by contrast, is composed only of constituents that are themselves valuable. Thus it is more valuable than any of its proper subparts. Here is Kvanvig's summary statement:

...understanding is valuable because it is constituted by subjectively justified true belief across an appropriately individuated body of information that is systematized and organized in the process of achieving understanding, and subjectively justified true belief that is systematized in this way is valuable.⁴⁵

Kvanvig is here speaking of "objectual understanding," which is factive in the sense that understanding a subject requires having beliefs about it, and those beliefs must be true if they are to be constituents of objectual understanding.⁴⁶ The object in question turns out to be a body of information or a subject matter. Notably, such things as car engines do not fit his description of objects of understanding, but a body of information regarding car engines might well be a suitable object of understanding. To understand a body of information one must grasp "explanatory and other coherence relations" that do in fact "obtain between the various beliefs involved in the achievement of understanding."⁴⁷ This requirement means that the object of understanding must be a body of information that is interrelated and adequately comprehensive.

To understand such an object one must (1) have the relevant *true* beliefs, (2) have *subjective justification* for those beliefs, and (3) have one's thinking *organized and systematized* by grasping the coherence relations among these beliefs. Kvanvig argues that these three components are all valuable and so understanding is more valuable than any of its proper parts.

⁴⁵ Kvanvig, 202.

⁴⁶ Kvanvig, 191.

⁴⁷ Kvanvig, 202.

While I treat understanding (or at least most forms of it) as a mode of knowing, Kvanvig argues that understanding is not a species of knowledge. He maintains this even though he takes understanding to be factive. According to Kvanvig, understanding and knowledge diverge when it comes to what is required in addition to facticity. Knowledge requires the truth of the belief in question (facticity) *and*, centrally, “non-accidental connections between mind and world.”⁴⁸ Understanding requires facticity *and*, centrally, “the grasping of relations between items of information.” This is the fundamental difference between knowledge and understanding, as Kvanvig sees the matter, and this provides the basic rationale for denying that understanding is a species of knowledge.⁴⁹ That (objectual) understanding is not a species of (objectual) knowledge can be proved, he thinks, by cases where someone has understanding but not knowledge. Specifically, he refers to cases where true beliefs included in the factive basis for understanding are Gettiered. If the beliefs are true and the agent grasps the relevant relations among them, then understanding is not threatened by “the disturbed etiology of beliefs.” One might be *lucky to have* understanding, but one does in fact have it, even if the luck element takes away any claim to knowledge.⁵⁰

Since Kvanvig does not think understanding requires knowledge of the relevant claims, it seems strange to require that the beliefs are true and subjectively justified. After all, one could have an understanding-like state with regard to objects that are possible but wrongly believed to be actual, and one could have an understanding-like state with regard to hypothetical objects. One natural reason to say that those states are not really understanding would be if one thought that understanding was a form of knowing. Taking understanding as a form of knowing would provide a natural reason to insist that understanding must be factive, but that cannot be Kvanvig’s rationale for treating understanding as factive, since he thinks understanding can be based on Gettiered beliefs.

⁴⁸ Kvanvig, 197. He does not, of course, mean that just any kind of non-accidental connection is sufficient for knowledge.

⁴⁹ Kvanvig, 197ff.

⁵⁰ Kvanvig, 199.

I agree with Kvanvig that one could, indeed, have understanding or something very much like it on the basis of Gettiered beliefs. However, it seems to me that such understanding would be more like understanding based on false beliefs than it would be like understanding based on propositional knowledge. It will be helpful to compare corresponding cases where understanding or an understanding-like state is based on false beliefs, Gettiered beliefs, or propositional knowledge, respectively.

DUPED

Reagan the reverse engineer sends a spy to a rival carmaker to get details on their new valve mechanism. The spy is unable to find out anything. He makes up some details concerning the mechanisms specifications and performance. As Reagan knows, this spy has proved trustworthy and competent in the past. But this time he just lies and give Reagan details that are quite different than those of the actual mechanism. However, Reagan, being a mechanical genius, contemplates his report and conceptualizes a mechanism that meets the specifications and performance the spy has described. Eventually Reagan has his company produce this mechanism.

GETTIERED

Reagan the reverse engineer sends a spy to a rival carmaker to get details on their new valve mechanism. The spy is unable to find out anything. He makes up some details concerning the mechanisms specifications and performance. As Reagan knows, this spy has proved trustworthy and competent in the past. But this time he just lies and gives Reagan the same made up details as in the previous case. However, Reagan, being a mechanical genius, contemplates his report and conceptualizes a mechanism that meets the specifications and performance the spy has described. As it turns out, this is the mechanism used by the rival company. Unbeknownst to the lying spy, he has given Reagan correct details. Eventually Reagan has his company produce this mechanism.

KNOWS

Reagan the reverse engineer sends a spy to a rival carmaker to get details on their new valve mechanism. The spy makes significant observations. He uncovers details concerning the mechanisms specifications and performance. As Reagan knows, this spy is trustworthy and competent. The details he gives are the same as in the previous case, but this time Reagan and the spy know the propositions that describe the rival's mechanism. However, Reagan, being a mechanical genius, contemplates his report and conceptualizes a mechanism that meets the specifications and performance the spy has described. Eventually Reagan has his company produce this mechanism.

On Kvanvig's view, GETTIERED and KNOWS are the same *with respect to understanding*, but DUPED fails to involve understanding (of the rival's valve mechanism)

because Reagan's beliefs about it are not true. Kvanvig maintains that understanding is factive, in the sense that the beliefs involved must be true, but that those beliefs need not be knowledge. I am inclined to group these differently. I would associate DUPED and GETTIERED and distinguished them from KNOWS. Both DUPED and GETTIERED represent a lack of cognitive contact between Reagan and what he thinks is the object of his knowledge. In neither case does Reagan know the actual mechanism the rival company uses.

One way to diagnose this difference in grouping would be simply to say that I am focused on knowledge whereas Kvanvig is focused on the quite different phenomenon of understanding. However, I can distinguish between the achievement of basic knowing *that* and a more robust intellectual achievement. This significant intellectual achievement is present in all three cases. In DUPED, in GETTIERED, and in KNOWS, Reagan moves from a set of beliefs to a robust understanding of something that those beliefs describe (or could describe). What the agent does in each situation is the same except that the starting beliefs have a different relation to the reality of the rival's valve mechanism. All of these cases involve some form of contact with reality, specifically with realities of physics and mechanics, but only KNOWS involves cognitive contact with the specific reality of the rival automaker's valve mechanism. Kvanvig would hold that understanding is the primary bearer of intellectual value and that it is present in GETTIERED but not in DUPED. I fail to see any significant difference of intellectual value between these two cases.⁵¹

Kvanvig does not commit himself to the claim that understanding is more valuable than knowledge, but he does suggest the possibility. He concludes *The Value of Knowledge and the Pursuit of Understanding* with these words:

“Yet the weaker position, that even understanding that fails to constitute knowledge is more valuable than knowledge itself, has its attractions. It comports well with our

⁵¹ Of course, in some situations a practical benefit will result from being Gettiered rather than duped—if, for example, one needs to fix an engine from the other automaker. The tendency to think that the truth of a belief, independent of any other conditions, makes it valuable might arise from the fact that we usually suspect that true beliefs that are not known are not *pure Gettier cases*. That is, we will suspect that true beliefs indicate that we are in some sort of good contact with reality that explains why we are getting it right, even if we cannot have much confidence that we are getting it right. Or we might suspect that our true beliefs are allowing us to interact appropriately with the world. But in a *pure Gettier situation* neither of these suspicions are correct. In those cases, we believe appropriately but are simply not in cognitive contact with the relevant aspect of reality.

ordinary conception that understanding is a milestone to be achieved by long and sustained efforts at knowledge acquisition. By making such efforts we move toward a goal that is more valuable than the possessions we might acquire on the way. And perhaps we can be graced by something more valuable than knowledge even when we find ourselves in the kinds of hostile environments that prevent the acquisition of knowledge in the pursuit of understanding.”⁵²

Presumably Kvanvig intends by “hostile environments” those that result in Gettier situations and by “understanding that fails to constitute knowledge” situations where understanding is achieved on the basis of subjectively justified and true but Gettiered beliefs. For he defines understanding as *factive*. But this paragraph does not mention truth even though it eloquently points to a value found in admirable intellectual conduct. Given this, one wonders why hostile environments that result in false beliefs should make it impossible for us to be graced by the value of understanding.

3.1.3 Brewer on understanding

Brewer devotes the final chapter of his 2009 book *The Retrieval of Ethics* to the virtues of theoretical inquiry. Like Kvanvig and Zagzebski, he sees a form of understanding as a central valuable intellectual phenomenon; and like them, he looks to ancient Greek philosophy to motivate attention to the concept of understanding. Brewer seeks a much more radical reorientation of epistemology and its central questions than either Zagzebski or Kvanvig propose. This leads him to characterize the form of understanding he has in mind more carefully, and to contrast it more sharply with true beliefs.

The central question for Brewer is not what knowledge is or even what understanding is but rather the question of what are the *goods of theoretical reflection*. He approaches this from the standpoint of intellectual virtues and he sees this investigation as continuous with his treatment of character virtues. Brewer is interested in “the full array of intrinsically valuable activities that compose a good human life” and this array of activities must surely include theoretical reflection.⁵³ So, Brewer’s account of understanding is shaped both by his general conception of virtue and by his attention to the goods realizable in theoretical reflection.

⁵² Kvanvig, *The Value of Knowledge and the Pursuit of Understanding*, 206.

⁵³ Brewer, *The Retrieval of Ethics*, 286.

Brewer is especially interested in actively appreciating goods through what he terms “dialectical activities,” which involve a continuous engagement with some good or value which deepens one’s appreciation of that good.

I discuss Brewer’s account of understanding in three sections. The first section concerns the respects in which he thinks that epistemology should follow the lead of virtue ethics. The second concerns his reasons for sharply distinguishing understanding from true belief and propositional knowledge. The third concerns his conception of the objects of understanding.

3.1.3.1 *Epistemology in the pattern of virtue ethics*

Brewer identifies two differences between the “conceptual template” of virtue ethics and the conceptual template for most of contemporary epistemology, including virtue epistemology. First, virtue epistemologists tend to treat the epistemic goal as something that can be understood independently of the intellectual virtues. They then assume intellectual virtues are oriented toward some “prior and conceptually independent conception of the proper end of theoretical reasoning,” and that the virtue are the states that “tend to produce” or “manifest an intention to produce” this independent good. Most often the “independent good” in question is knowledge or true belief, but it could also be something like understanding. By contrast, virtue ethicists tend to insist that gaining a “concrete understanding” of the telos sought in virtuous action requires “clarifying our conception of the virtues.”⁵⁴

Second, most virtue epistemologists locate the epistemic telos or end in an achieved state, rather than in an activity. As the most common example, having true, or justified or warranted beliefs is not an ongoing intellectual activity; it is a state that can be attained and that can be properly “attributed to people even in moments of mental inactivity.”⁵⁵ Brewer does not think the telos of theoretical inquiry can be any such *achieved state*. Rather the final ends of human beings, whether practical or theoretical, must be found in “life-constituting activities” that make us the kind of beings that humans are.⁵⁶

⁵⁴ Brewer, 287.

⁵⁵ Brewer, 287.

⁵⁶ Brewer, 288.

Brewer calls these activities dialectical activities. This is a revised construal of Aristotle's notion of an activity as opposed to a process (I discuss Aristotle's distinction in section four). We must engage in dialectical activities in an ongoing or repeated manner if we are to adequately appreciate or understand them. Brewer offers philosophy and friendships as prime examples, but he thinks the dialectical structure applies to a range of common activities. The full and distinctive value of such activities cannot be appreciated from the outside or from the outset. Rather, one must experience the value if one is to understand the activity. These activities, whether philosophizing, engaging a friendship etc., involve continuous learning and discovery. As one properly engages in such an activity, one deepens one's appreciation for the goodness involved in the activity and one's grasp of what excellence in the activity amounts to. For many activities, this dialectical process of deepening understanding and fuller engagement "can be reiterated indefinitely."⁵⁷

An activity qualifies as dialectical if its "point lies in an intrinsic goodness that is to some considerable degree opaque to those who lack experience with those who lack experience with the activity, but that tends to unveil itself incrementally as one gains first-hand experience with it."⁵⁸ Brewer takes this to be the case with regard to the goods of theoretical reflection, and such goods would almost surely count as those that can be explored indefinitely. Theoretical reflection is an intrinsically valuable and important human good. Such activities hardly admit of a level of experience that enables a *completed* appreciation of their value. Further, an activity could hardly count as intrinsically valuable for humans if it were simple enough that we could fully grasp its value without remainder.⁵⁹ One must engage in thinking well and pursuing understanding in order to appreciate the point and goodness of so doing. As a corollary, the telos of epistemology must be understood in terms of what makes for excellent or poor intellectual activity, which is to say in terms of the virtues and vices of thinking. And indeed, it is considerations of excellence, or its opposite, in intellectual

⁵⁷ Brewer, 37.

⁵⁸ Brewer, 39.

⁵⁹ Brewer, 39–40.

pursuits that informs Brewer's argument that understanding rather than true belief or propositional knowledge is the proper telos of thought.

3.1.3.2 *Understanding versus propositional knowledge*

Brewer rather quickly dismisses the idea that true belief as such is valuable. For him this entails a rejection of any attempt to make the production of true beliefs (and the avoidance of false beliefs) the telos or goal of epistemology. Brewer's contention is not the standard epistemologist's point that some true beliefs are true merely by accident and are neither known nor justified. Rather, he intends his statements about true beliefs to carry over to justified true beliefs and even to propositional knowledge. Some true beliefs are too trivial to contribute to any good. Such trivial true beliefs do not become more valuable, Brewer thinks, by being justified or even by being known. Here we can see how Brewer's approach to epistemology is guided by his sense of intellectual virtues and vices. An undifferentiated zeal for truth would not be a virtue and could "manifest itself in minor vices" such as "a distracting fascination with triviality" which might be "part of a larger aversion to, or flight from, the struggle to understand the world and one's place in it."⁶⁰

Brewer places a form of understanding rather than true belief or propositional knowledge as the central end of epistemology. Understanding is not just a matter of having a sufficiently comprehensive, important, and interrelated set of true beliefs. "Understanding does not seem to be composed exhaustively of true beliefs."⁶¹ Brewer thinks previous theorists recognized this point when they required that "understanding involves an insight into some array of facts that does not consist solely in coming to believe a longer list of true propositions."⁶²

Brewer wants to make clear *why* understanding needs to involve something beyond propositional beliefs. As the first stage in this endeavor he considers what it is to *internalize a*

⁶⁰ Brewer, 297.

⁶¹ Brewer, 297.

⁶² Brewer, 298. Brewer notes especially the accounts given by Wayne Riggs and by Kvanvig. Wayne Riggs, "Understanding 'Virtue' and the Virtue of Understanding," in *Intellectual Virtue: Perspectives from Ethics and Epistemology*, ed. Linda Zagzebski and Michael DePaul (Oxford: Ox, 2003), 203–26; Kvanvig, *The Value of Knowledge and the Pursuit of Understanding*.

rule. Here he draws on Julius Moravcsik's discussion of understanding as the proper construal of Platonic *episteme*. Internalization of a rule requires that "an attachment to the rule is implicit in our characteristic sense of how best to think," but it does not always involve the ability to articulate the rule. When we can articulate in propositional form the judgements made on the basis of these rules, our understanding explains our ability to articulate; our understanding cannot be reduced to the propositions we can articulate. Grasping *modus tollens*, for example, requires more than a sincere affirmation of what the textbook says about it.⁶³ Such a grasp requires "facility in putting the rules to use" and one who understands a rule "characteristically thinks in accordance with it."⁶⁴

Applying rules, and certainly understanding, requires "recognition capacities." Scientists, for example, must learn to identify the things they are to observe and study, whether these be disease symptoms, plant species, or "traces on computer screens that signify the presence of charged particles." Similar capacities for recognition are required in many areas of inquiry. We need, for example, "a vivid and reliable sense of the difference between fruitful or illuminating thoughts and distractions or trivialities, and between charitable and forced interpretations of texts."⁶⁵ We need to internalize the proprieties of thought, not simply to know a propositional description of those rules. But ultimately understanding cannot be cashed out as simply internalized rules, helpful as such rules may be for getting us to think about understanding. Rules, whether internalized or not, tell us what to make of some array of conditions. This requires that they specify what conditions render them applicable. "The application of a rule, then, presupposes a tacit or explicit judgement to the effect that the world meets those triggering conditions."⁶⁶ Applying a rule requires seeing that the rule applies, and this requires a certain conceptualization or way of thinking the world. In other words, internalizing a rule requires understanding, understanding cannot only consist in having internalized rules on pain of an infinite regress of rules. Moving toward understanding

⁶³ All frustrated logic teachers should grant this point!

⁶⁴ Brewer, *The Retrieval of Ethics*, 299.

⁶⁵ Brewer, 300.

⁶⁶ Brewer, 301.

requires us to come to see the world aright, “to bring what one dimly sees into clearer view.”⁶⁷

As we will see in chapter five, this process of coming to rightly or better conceptualize the world is a central concern for Michael Polanyi⁶⁸ and for Polanyian Esther Meek.⁶⁹

3.1.3.3 *The objects of understanding and the relation of understanding to knowing*

We have seen several examples which Brewer gives of objects of understanding.

While these came from academic pursuits, understanding is ubiquitous and shows up in everyday contexts as well. The objects of understanding include “people and their relationships, ways of life, social situations, cultures, words, languages, conversations and their subtexts, poems and parables, not to mention such things as chess, baseball, the game of politics, and the world of advertising.”⁷⁰ But not everything that can be known admits of being understood. One might know what the fourth number listed in some phone book is, or how many grains of sand are in a certain vial, but, absent some special explanatory context, such facts are not the kinds of things that can be understood. One can understand the meaning of the sentences that convey these facts, but hardly the fact themselves. Understanding comes in degrees and can be “clear or hazy, partial or complete,” but it is hard to have a hazy grasp of the fact that there are 1125 grains of sand in a given vial.⁷¹

Brewer argues that it is an ontological matter whether or not a fact admits of being understood; this depends on the nature of the known reality. This same difference explains, he argues, why some knowledge is more important and valuable than other knowledge. Something that can be understood must reflect some complexity and structure. It must be an intelligible part of our world (and for Brewer our world will be quite broadly construed to include human culture and thought). Trivial and unimportant beliefs such as those concerning random phone book entries or random grass blade counts can indeed be known, but they can’t be understood. Beliefs that can be understood, by contrast, have some sort of intellectual

⁶⁷ Brewer, 300–301.

⁶⁸ Polanyi, *The Tacit Dimension*.

⁶⁹ Esther Lightcap Meek, *Loving to Know: Introducing Covenant Epistemology* (Eugene, OR: Cascade Books, 2011).

⁷⁰ Brewer, *The Retrieval of Ethics*, 301.

⁷¹ Brewer, 301–2.

value. For, “understanding always involves insight into why things are as they are, or how they cohere in larger patterns of order or coherence.”⁷² The value of true beliefs and propositions depends on their contribution to understanding; they are intellectually valuable when they “extend or deepen our understanding of the world.”⁷³

Brewer insists that the telos of human intellectual life is not the achievement of a *state* of understanding but the *activity* of understanding itself. Understanding is required to grasp and appreciate the world we find ourselves in. The value of understanding “lies in active and self-deepening apprehension of the elegant order of the world in which one’s life unfolds.”⁷⁴ This idea that understanding is an ongoing activity in relation to the known becomes a big part of my discussion of knowing in chapter five.

It is a short step to thinking of understanding as a way of knowing the world in a relational way, which is how I treat understanding in chapter five. While Brewer does not develop the point extensively, he does mention the similarities between understanding and non-propositional knowledge. He notes that the “ordinary idea of knowledge” or the “common-sense notion of knowledge” involve far more than propositional knowledge, and that this notion of knowledge would involve understanding of the sort he describes.

An investigation of the ordinary idea of knowledge would take us far beyond a truncated preoccupation with propositional knowledge, sweeping in whatever it is that we have in mind when we speak of knowing such things as botany, Hegelian idealism, French history, some rudimentary Spanish, the Australian Outback, the Arab World, not to mention an old friend, an old friend’s face, how to ride a bike, or the difference between right and wrong.⁷⁵

Clearly, my attempt to make sense of the value of craft as knowing lies within the scope of such an investigation. Two items on Brewer’s list are worth noting. First, knowing how to ride a bicycle is a central example in the knowing how literature discussed below in section two. Second, knowing a friend is a prime example of knowing persons, and in chapter five I use knowing persons as a paradigm for thinking about knowing objects more generally.

⁷² Brewer, 302.

⁷³ Brewer, 302.

⁷⁴ Brewer, 305–9.

⁷⁵ Brewer, 325.

3.1.4 Summary conclusions about understanding

Let me first briefly recap a few themes from the authors surveyed and my position regarding those themes. Discussions of understanding often focus on more academic forms of thought, though Zagzebski gives some work-related examples like car engines and pastry making. But understanding is a big step closer to the knowledge found in work than is bare propositional knowledge. This is because understanding is a relation between the knower and the relevant aspect of reality, and not simply a relation between the knower and a body of information *about* that aspect of reality. (At least this is so on the construals of understanding I am most sympathetic with. Of the three thinkers discussed here, Brewer and Zagzebski indicate that what is understood is some object or aspect of reality, while Kvanvig talks as if what is understood is a body of information about some aspect of reality.)

I take understanding to be one way of being in cognitive contact with some aspect of reality. Thus, I take it to be a form of knowing. One philosopher I have looked at, namely Brewer, suggests categorizing understanding as a more important or fuller form of knowledge than propositional knowledge. While Zagzebski denies that understanding is a species of knowledge, the difference may be more terminological than substantive, since what she means by understanding fits the broader sense of knowing that I am working with. Kvanvig denies that understanding is knowledge for reasons indicated in the discussion of Gettier cases above. While Gettiered understanding is an interesting possibility, I do not think it shows that understanding is not knowing. However, in some cases, such as understanding a hypothetical or even mistaken possibility, the object that is known may be something abstract like principles of mechanics or physics rather than a concrete object.

In chapter five I relate understanding to knowing via “participating-with.” Understanding, or at least many instances of it, is one form of participatory knowing. But not all participatory knowing classes easily or naturally as understanding. This is especially the case when the modes of participating with reality are robustly physical or practical as they are in craft. Those physical and practical ways of participating-with do get some attention in the literature of knowing how, to which I turn next.

3.2 Knowing how

While most contemporary epistemologists do not class understanding as a form of knowledge, most admit that there are some non-propositional forms of knowledge—though they are often considered peripheral to epistemology. *Knowing how* to do something is one such form of knowledge that has recently gotten significant attention. This form of knowing includes such things as knowing how to ride a bicycle, play a tune, walk on ice, or properly criticize a game of chess.

Knowing how to do something connects closely with skill, and it often concerns physical abilities. This brings natural connections with skilled physical work. This in itself makes knowing how significant for my project in this dissertation. Knowing how also raises important issues for a general account of knowing. These concern the kinds of agency involved in knowledge and the kinds of contact with reality that can constitute knowledge. Knowing how to do something is knowledge related to participating with some aspect of reality. Knowing how to ride a bicycle for example, might seem to be just a fact about a person rather than a relation between the person and some object he knows. But, to know how to ride a bicycle one must, in some way, know the bicycle, the surface, and his own body. Knowing how relies on knowing things through action; it does not always rely on articulacy about the things one is working with or on articulacy about *how* I do the activity. Knowing how forcefully raises the question of what sorts of contact with reality can constitute knowledge. Knowing how to ride a bicycle involves lots of contact with reality and requires that the knower get reality right—on pain of flops, tumbles, and injury! But embodied skill is not a typical paradigm of a cognitive activity. So, thinking about knowing how forces us to broaden our definition of what counts as knowing as aspect of reality, and to broaden it in ways that are amenable to appreciating skilled physical work as knowing.

3.2.1 Ryle on knowing how

Contemporary discussion of knowing how has come largely in response to Gilbert Ryle's treatment in his 1949 book *The Concept of Mind*. Ryle argues that knowing how is not

peripheral or derivative as an epistemological category. He argues that knowing how is epistemologically central and that it is more fundamental than propositional knowledge. Much of the literature accepts Ryle's claim that knowing how is not knowing that, though fewer follow him in treating knowing how as primary. However, in a much noticed 2001 paper, Jason Stanley and Timothy Williamson argue that knowing how is a species of knowing that and imply that most philosophical use of the distinction is misguided. For my purposes, exploring Ryle's treatment is primary and responding to Stanley and Williamson is secondary.

Ryle's discussion of knowing how is part of his broader discussion of what it is to act intelligently. He draws a technical distinction between "intellectual" and "intelligent." For him, what is intellectual has to do with activities connected with theorizing and propositional knowledge, while intelligence applies much more broadly to matters of the mind.⁷⁶ (In the rest of the dissertation I use the term intellectual more broadly to refer to things connected to knowing *qua* knowing; here I follow Ryle's terminology.)

Ryle attacks the idea that theorizing is logically prior to other intelligent actions. By theorizing he intends those mental operations which have as their goal "knowledge of true propositions or facts." Approaches to rationality that prioritize theory identify rationality as the ability "to recognise truths and the connections between them." Other human powers are then recognized as mental or intelligent in ways derivative from this definition, insofar as they are "somehow piloted by the intellectual grasp of true propositions."⁷⁷ Ryle is concerned to deny that to act rationally is simply "to have one's non-theoretical propensities controlled by one's apprehension of truths about the conduct of life." Ryle thinks this gets things backwards—and gets it backwards across the full range of activities we might be said to do rationally. Ryle's point is not that articulacy and heeding maxims are not helpful for acting rationally and for knowing how to do something. Rather, his point is that knowing how does

⁷⁶ With the word "theory" Ryle seems to have more in mind than random propositional knowledge. He cites mathematics and natural science as prime examples of theories. These involve a body of propositions that relate together to give an account of something. But his criticisms are directed primarily at the propositional character of these theories and he soon generalizes his discussion to all varieties of *knowing that*.

⁷⁷ Gilbert Ryle, *The Concept of Mind*, University of Chicago Press ed. 1984 (Chicago: University of Chicago Press [Originally published by Hutchinson. London], 1949), 26.

not bottom out, or top out, in knowing *that* something is the case or *that* some principle of action is correct.

Intelligent activities involving getting the world right even if they do not involve theories, and, even if they quite prominently employ body-parts other than brains. Knowing how means that one tends to perform at a certain level. Ryle describes it as an ability, as a competence, and as a skill. Knowing how also requires, as these terms suggest, that one is responsible for the performance of the activities; a well-regulated clock keeps time correctly but not intelligently. A skillful or careful performance requires that one “detect and correct lapses,” learn from successes, benefit from others’ examples, etc. Intelligent performance is critical performance where one is “trying to get things right.”⁷⁸ An externally correct performance does not guarantee knowledge. A parrot might squawk out a sentence which is entailed by the sentences some human just uttered, or a boy might give the right multiplication answer while thinking about cricket, but this does not mean the parrot can deduce or that the boy has worked the problem.⁷⁹ Knowing how to play chess, for example, is not determined by whether one can state the rules, though such statements will quite often be used in the process of learning. Whether or not one knows how to play chess is determined by one’s ability to make correct moves and recognize whether another’s move is acceptable or not.⁸⁰

Ryle insists that knowing how to do something or possessing a skill is not just having a helpful habit. Habits are one kind of second nature, intelligent capacities another. Habits can be developed by drill or conditioning, and individual performances are a matter of repeating what came before, but skills and competences come by training. Training develops intelligence rather than replacing it, as evidenced by the ways in which skills involve ongoing learning. Training involves a drill element, but it also involves criticism and the development of judgment. The thoughtful exercise of a skill involves responsive learning and thus teaching

⁷⁸ Ryle, 28–29.

⁷⁹ Ryle, 40.

⁸⁰ Ryle, 40–41.

oneself the skill.⁸¹ Knowing how is active and engaged and requires the exercise of intelligence in a way that habits do not.

Ryle argues that we should see the intellectual within the context of the intelligent, rather than assigning priority to the intellectual over the intelligent; knowing that needs to be seen within the context of knowing how. He employs several lines of argument. For one thing, knowing how is required for *understanding and following* activities, not just for *executing* them.⁸² Following and evaluating a chess game, for example, requires that one know how to play chess, at least to an extent. Intelligent propositional commentary on a chess game can only come from someone who knows how to play and can follow the game and the moves to a sufficient extent that he can appreciate their brilliance or stupidity. Propositional knowledge about the skill is an important way of expressing something about the exercise of a skill and of conveying it to others. But it is logically derivative from the skill.⁸³

Further, theorizing is itself an intelligent activity. This means that it can be conducted with greater or lesser intelligence, and so, that our theoretical abilities are one form of

⁸¹ Ryle, 42–43.

⁸² Ryle, 54ff.

⁸³ Something should be said about the larger framework within which Ryle situates his discussion of intelligent activities. Ryle's aims to elucidate and defend a philosophy of mind that is radically anti-dualist. For Ryle, these arguments concerning what it is to act intelligently or to know how to do something function as part of his attempt to dissolve the mind body problem. He tries to do this by identifying intelligence and knowledge with complex dispositions to behave in certain ways in certain conditions. Ryle thinks that the "intellectualist legend" that he is attacking goes with a dualist philosophy of mind where the mind knows or thinks things quite independently of what the body does. He takes this to be reflected in the view that intelligence has to do with the immaterial mind and bodily actions are rational or intelligent only in the derivative sense of being controlled by the immaterial mind and its knowledge. Ryle's proposed solution is to identify the mental with the dispositions that are manifested in intelligent performances (or in performances that should be intelligent but fail to be). Certain bodily actions are mental actions, but whether or not they are the sort of mental actions we think they are cannot be determined by a simple one-time observation; rather we need to know the dispositions involved. I have no quarrel with saying that certain bodily actions are mental actions. Indeed, it is part of my overall argument that physical activities, including those of physical work, can themselves be knowing activities. But I fail to see how Ryle has accomplished what he claims to have accomplished with this move. He wants to say that any opposition between the mental and the physical is simply a category mistake, akin to saying that I bought a right-hand glove, a left-hand glove, and a pair of gloves.⁸³ Mental acts are just bodily acts that manifest the right dispositions. But appeal to dispositions will hardly help without saying what *explains* the dispositions. Ryle is, after all, not going to accept all dispositions as mental. Considered the previously referenced example of a clock keeping correct time. An intelligent person is self-regulating in his performance. And Ryle is not explaining away modal terms like dispositions as simply statements about what usually happens or in terms of frequency. He admits that the behaviors that evidence someone's knowing how to do something are just that, *evidence*. Even with strong and diversified evidence that someone is acting intelligently, it is possible to be wrong, even if we can be satisfied beyond a reasonable doubt.⁸³ This bare possibility, though, shows that the physical evidence or manifestations of a disposition do not constitute the dispositions that Ryle takes to constitute the mental. Needless to say, his analysis of the relationship between knowing that and knowing how need not be married to a logical behaviorist view of the mental.

knowing how. Following the exposition of a theory also requires knowing how. Learning what someone else has discovered and theorized is easier than discovering and theorizing fresh material, but it requires the same sort of mental capacity.⁸⁴

Ryle argues that, if knowing how to do something were derivative from knowing propositions about how it should be done, this would result in a vicious regress. He is arguing most specifically against a view of intelligent actions that sees them as consisting in two stages: (1) consideration of propositions concerning the correct way to perform the activity and (2) application of those principles. The reason this generates a vicious regress is that formulating principles, whether of angling or addition, is itself a skill that can be done better or worse. If every exercise of skill required first formulating principles about what one is going to do, then one would first have to formulate principles for formulating principles or plan to plan, in every case, and the series could not in principle have a first member. The regress also arises with regard to applying general principles to particular cases. One must know how to discern such applications, and one can apply such principles sensibly or stupidly. Thus, knowing how is required to even be able to apply principles. Knowing how cannot, thus, be downstream from knowing that in the way that talk of applying principles might suggest.⁸⁵

There are interesting similarities here to Brewer's regress argument. Brewer also uses the notion of applying a rule to argue that understanding could not bottom out simply in knowing the right set of propositions. One must have understanding of reality to even apply general propositions to the world one interacts with. Ryle describes understanding as a form of knowing how.⁸⁶ Understanding is for him another occasion of actively and mindedly exercising skill.

⁸⁴ Ryle, *The Concept of Mind*, 30–32, 54–55.

⁸⁵ Ryle, 30–32.

⁸⁶ Ryle, 54.

3.2.2 Assessing Ryle and his critics

Timothy Williamson and Jason Stanley have attracted significant attention for their argument that knowing how is a species of propositional knowledge.⁸⁷ Their position would undermine some of the uses I intend to make of Ryle's treatment of knowing how. So, a response to some of their key contentions is in order here. I focus on three aspects of Stanley and Williamson's article. The first is their argument that treating know how as propositional does not entail a vicious regress. The second is their rejection of Ryle's positive view, with its tight connection between ability and knowing how. The third is their sketch of a positive picture of knowing how as a form of propositional knowledge.

Stanley and Williamson deny that Ryle's regress argument entails that knowing how is a subspecies of knowing how. The hinge point in their case is that we do not need to actively contemplate propositional knowledge in order to use it. One might employ knowledge that doors open by the turn of a knob without articulating that truth. One's knowledge of the proposition shows through in one's interaction with the door.⁸⁸ This allegedly defeats a regress argument that knowing how cannot be propositional knowledge. The regress argument, as they formulate it, depends on the claim that using propositional knowledge (of, for example, how to do something) requires actively contemplating that proposition.

It is indeed worth noticing that the knowledge used in routine door opening can be characterized as knowing that the door can be opened by a turn of the knob and as including the knowledge that the door is there. But it is less than clear that this is damaging to Ryle's position. For one thing, as Stanley and Williamson admit,⁸⁹ they are not concerned with whether Ryle's argument succeeds against his intended target—the “intellectualist legend,”—but rather with a narrower question of whether it shows that knowing how is not propositional. One might use the example to argue that even knowing that does not fit with the approach of the intellectualist legend—a point congenial to Ryle.

⁸⁷ Jason Stanley and Timothy Williamson, “Knowing How,” *Journal of Philosophy* 98, no. 8 (2001): 411–444.

⁸⁸ Stanley and Williamson, 415; Citing an example from Carl Ginet *Knowledge, Perception, and Memory* (Boston: Reidel, 1975).

⁸⁹ Stanley and Williamson, “Knowing How,” 415 footnote 6.

I find Ryle's positive view of knowing how interesting and helpful. But Stanley and Williamson pay it little attention. They dismiss Ryle's account of knowing how in the following passage.

According to Ryle, an ascription of the form 'x knows how to F' merely ascribes to x the ability to F. It is simply false, however, that ascriptions of knowledge-how ascribe abilities. As Ginet and others have pointed out, ascriptions of knowledge-how do not even entail ascriptions of the corresponding abilities. For example, a ski instructor may know how to perform a certain complex stunt, without being able to perform it herself. Similarly, a master pianist who loses both of her arms in a tragic car accident still knows how to play the piano. But she has lost her ability to do so. It follows that Ryle's own positive account of knowledge-how is demonstrably false.⁹⁰

It is grossly inadequate to say that Ryle treats knowing how as *merely* an ability.⁹¹

Ryle is interested in *intelligent* abilities. He differentiates these *both* from non-voluntary actions or processes of an agent, *and* from mere habits which can be inculcated simply by drill or conditioning.

However, their two examples do fit the kinds of activities Ryle has in mind with knowing how. But I find these alleged counter-examples less than convincing. Perhaps the pianist does not lose any knowledge of how to play the piano when she loses her arms. But even if this is the case, and she retains her full knowledge how to play, this need not impugn the kind of connection with ability that Ryle draws. Not being able to play piano because your arms have been freshly cut off is more like not being able to play because your arms are tied behind your back than it is like the lack of ability that comes from not knowing how to play. Further, it seems one would lose some piano knowledge over time as one takes up a new, armless, mode of participating with the world. With regard to the ski instructor, there is *a sense* in which the ski instructor knows how to execute the stunt, but it is not at all obvious that he has or could have *all* the relevant know how that *that the skilled skier has*. Perhaps we can imagine a case where the only difference between the skier and his instructor is a non-intelligent ability that the skier has. But in most such cases, if the skier suddenly acquired,

⁹⁰ Stanley and Williamson, 416.

⁹¹ Ryle does treat minds as merely a set of dispositions, as referenced in a previous note. But he distinguishes mental dispositions from mere abilities or mere habitual dispositions.

say, an extra dose of strength, he would still have to *learn* how to use that strength to perform the stunt.⁹²

Stanley and Williamson's own positive view is sketched only briefly in their essay. They attempt to describe the kind of propositional knowledge which they take knowledge how to be.⁹³ Knowing how to do something is knowledge of a proposition which contains as one of its elements a *way* of doing that thing.⁹⁴ To say that two people ride a bicycle the same way, for example, would be to say that their respective acts of riding share the same way property. These propositions may be presented to one in various ways. One could describe the way of riding the bicycle (if possible), or one could point demonstratively to the way that someone else rides the bicycle. The relevant proposition can also be known via what Stanley and Williamson term a "practical mode of presentation."

This practical mode of presentation is supposed to explain some of the obvious differences between (many case of) knowing how and more standard forms of propositional knowledge. They do not say much about what such a mode of presentation is. But they insist there must be such a mode. They draw an analogy with what they call a first-person mode of presentation. The very same proposition might be presented as that *I* have *my* pants on fire or as that individual *x* has his pants on fire. Still, even though both are affirmations of the same proposition, what I affirm under the description of "I," or of any indexical for that matter, I may not affirm under a different description or presentation. In the same way, they argue, the fact that I do not and would not affirm certain ways of presenting propositions concerning ways of doing activities, does not mean that I do not know that same proposition, under a practical presentation.

⁹² Also, it should be remembered that Ryle argues that understanding and criticizing intelligent performances is also an activity that one must know how to do. Ryle would class the ski instructor as having know how with much the same structure as the player.

⁹³ This account is intended to "undermine" versions of the distinction between knowing how and knowing that, which they deem more "sophisticated." They use David Carr's work as an example. They describe his thesis as the claim that knowing how involves a relation between an agent and an action rather than between an agent and a proposition. "Knowing How," 416–17; They refer to David Carr, "Knowledge in Practice," *American Philosophical Quarterly* XVIII (1981): 53–61; and to David Carr, "The Logic of Knowing How and Ability," *Mind* LXXXVIII (1979): 394–409.

⁹⁴ Stanley and Williamson, "Knowing How," 427.

Per Norström raises difficulties for cashing out knowing how like this. These difficulties arise from consideration of how we learn to do things. Normal knowledge of propositions can be learned through reading or other ways of obtaining descriptions. By contrast, the kind of knowing how that Stanley and Williamson describes as knowing a proposition in a practical presentation is only learned through experience and practice. This difference suggests that Williamson and Stanley simply recreate Ryle's distinction in other terms. Further, if knowing how is to be cashed out in terms of practical presentations of propositions, then it would have to be the case that propositions can be known to a greater or lesser degree since the practical presentation of how to ride a bicycle or how to solder is something that one learns gradually through practice. But it is supposed to be a distinguishing mark of propositional knowledge that it does not come in degrees.⁹⁵

Stanley and Williamson seem to assimilate different ways one can be said to know how to do something. Compare:

- (a) How do you chop apples in the blender? With the lowest speed setting.
- (b) How do you carry water pots on your head with your arms free? By ...
- (c) How do you pitch a curve ball? By putting such and such a spin on the ball.

Certain how questions admit of quick answers and instructions. Anyone reasonably familiar with the kitchen blender can push the right button after such instructions. If the button is out of reach for some reason, one might protest that he knows how but is unable to do it. It is not knowledge that he needs. However, when it comes to balancing pots on one's head, someone could, I am sure, fill out a set of instructions. Yet, if after studying those instructions I can't keep the water pot from tumbling down, I can hardly protest that I know how to do it, but just can't do it. What is gained in the (instruction guided) practice is knowledge, not merely ability. When it comes to how to pitch a curve ball, someone who knows can tell me what sort of spin I need to put on the ball and, probably, what sort of body movements I need in order to achieve that spin. But this would only give me knowledge how to pitch a curve ball if I already knew how to control the spin of the ball or execute the body

⁹⁵ Per Norström, "Knowing How, Knowing That, Knowing Technology," *Philosophy and Technology* 28, no. 4 (2015): 561–62.

movements described. Many things about knowing how to do any given activity can be put into propositions. There exist how questions that can be satisfactorily resolved by citing a proposition. However, others require additional learning after citing the proposition. Even if this additional learning can be cashed out as coming to know a proposition, it will have many of the features of Ryle's knowing how. Thus, Stanley and Williamson's contentions fail to undermine Ryle's description of knowing how as connected closely with skills and abilities.

3.2.3 Lessons from the literature on knowing how

Ryle's depiction of knowing how adds some interesting pieces to my examination of how we know objects. Two are worth commenting on here. The first is the way in which knowing other things involves knowing ourselves. The second is the way knowledge comes through our agency, and particularly through our physical agency.

Eva-Maria Jung and Albert Newen⁹⁶ point out a distinctive feature of Rylean knowing how. They contrast it with propositional knowledge and with image-like knowledge which, they say, involve objectification—a sense by the subject that he knows something other than himself. On the other hand, with Rylean abilities it is hard to distinguish between the knowing subject and the action which is known. Intelligent skills seem just as much characteristics of the skilled person as they do knowledge of some distinct aspect of reality. While Stanley and Williamson try to describe knowing how as a relation between a person and a proposition, we might be tempted to go the other way and think that “knowing-how” is not really knowing because there is no object that is known. We might think of intelligent abilities as simply patterns of a subject's action, rather than as knowledge of distinct objects. I take such skills to involve both self-knowledge, specifically knowledge of how one's agency can be exercised, and knowledge of other aspects of reality that one works with in the exercise of the skill.⁹⁷ One knows the objects one works with, as well as the structure and (to varying extents) the

⁹⁶ Eva-Maria Jung and Albert Newen, “Knowledge and Abilities: The Need for a New Understanding of Knowing-How,” *Phenomenology and the Cognitive Sciences* 9, no. 1 (March 1, 2010): 113–31, <https://doi.org/10.1007/s11097-009-9129-3>.

⁹⁷ Esther Meek speaks of knowledge as being simultaneously knowledge of the world and of the self that knows (as well as knowledge of God). Meek's views, including this point, will be discussed more extensively in chapter five. *Loving to Know: Introducing Covenant Epistemology*.

point of the activities one is engaged in. The discussion in chapter five of Polanyi's epistemology and of knowing by participating with takes up this point about skill as knowledge.

Knowing the world *through our agency* is the core idea that I will develop in chapter five in order to make more perspicuous the value of working as knowing. Knowing how is often a robustly physical form of knowledge involving a trained body. Bicycle riding, mountain climbing, and marksmanship are prime examples.⁹⁸ A large part of the skill involves trained muscular control. Obviously much of the knowledge involved in skilled physical work will be of this sort. Yet knowing how is not limited to skilled muscular performances, as evidenced by Ryle's example of learning to play chess well. Whether or not the skill is overtly physical, knowing how is closely connected to our agency and action. Ryle's analysis of knowing how points to that connection, but I need to develop in much more detail the ways in which engaging in intelligent activities can constitute knowing various aspects of reality. The significance of knowing the world through our agency will be fleshed out in two ways. First, it is important to have knowledge that comes through robustly physical participatory activities, both for the sake of knowing ourselves and our bodies, and for the sake of knowing physical and concrete aspects of the world. Second, thinking about how we know through our agency reveals how the instrumental character of work can actually benefit us with regard to knowing. The work to obtain some desired result from our agency and the things we are working with gives us a different kind of knowledge than we might have through a more detached process. The participatory activities of craft are *practically* robust.

3.3 Taking stock and transitioning to Aristotle

I have discussed understanding and knowing how for two reasons. First, the literature on these intellectual states or activities discusses various ways in which epistemology focused on propositional knowledge is incomplete. Second, this literature provides clues and building blocks for my own way of thinking about knowing. As was seen in the first section, theorists

⁹⁸ The first example is commonly mentioned, including by Stanley and Williamson. The second two are from Ryle's discussion.

of understanding, in particular, have drawn some inspiration from ancient epistemology. In the next section, I consider one example of ancient epistemology, namely Aristotle's discussion of "truthing" (*alētheuein*), which shares many similarities with the way I describe knowing by participating-with in chapter five.

The knowledge I am most interested in is a fuller knowledge of objects (broadly construed). This comes in degrees. One can know an object more or less well, and since some objects are more central to reality than others and some are more directly related to me than others, knowing some objects is more intellectually important than knowing others. This is not to say that propositional knowledge is not knowledge but only that it need not represent a very high degree of knowledge. It might represent only a highly mediated contact with reality. Fuller knowledge is defined by participation and interaction and ultimately a cognitive grasp of reality. Many characteristics associated with understanding and knowing how are indicators of a contact with reality that is more robust than what would be required simply to have propositional knowledge about their objects.

Considering Aristotle furthers several themes that have emerged in this chapter. For one thing, knowing involves grasping the structure of the known. Also, some things are more fully knowable than others and involve a higher grade of knowledge. And finally, knowing involves doing, and doing things is not merely "application" of knowledge.

The point that knowing involves grasping the structure of the known emerges from consideration of understanding. To understand something is to grasp its internal or external relations, normally both. Brewer emphasizes that understanding involves more than the ability to describe and reason about the structure, it involves having one's own thinking structured by the reality one understands. Knowing how also involves this grasp of the structure of reality. One who knows how to play chess thinks not only about chess, but in terms of chess. One who knows how to ride a bicycle thinks in terms of his bicycle competences when concentrating to navigate particularly difficult courses. One's thinking and agency takes on the structure of what is known. This correspondence between the mind or rational soul and the

objects of knowledge is thematized in Aristotle (though I am not committed to his accounting of it).

Some things are more important to know than others. This importance can derive either from the nature of the known or from the relation of the known to our particular lives. We saw this lesson in Brewer's discussion of understanding, where he ranks objects of knowledge by their capacity to call forth our appreciative attention. The theme of knowledge deriving its importance from objects looms large in Aristotle. (In fact, Aristotle emphasizes the role of important objects of knowledge in a way that makes it difficult to see how the knowledge of skilled physical work could be important or worthwhile. I engage with this worry in chapter four.)

The general lesson I draw from the discussion of knowing how is that knowing does require a capacity to work with the object of knowledge in one way or another; even formulating propositions to describe a known reality is a form of working with the reality because it is an activity that engages with it. This contrasts with the tendency to think of knowing simply as a matter of knowing that some proposition is true. On such a view, what is intellectual is the formation and learning of claims. Reading the manual for a lawn mower might be intellectual, but operating or fixing it would not be. Such things would rather be classed as *application* of knowledge, and application is, on this view, something quite different from knowing. This view creates a strong divide between theory and practice and between thinking and action. Of course, most will recognize the limited value of certain kinds of knowledge if it is not applied, and most will recognize that attempting to do without knowing, and even sometimes *studying*, the right things will make for trouble. But those two admissions may leave intact the rigid distinction between knowing and doing.

Aristotle gives us significant resources to get past this obstacle to appreciating the value of craft. His conception of knowing does not have the sharp divide between thinking and doing. He thinks of knowing as knowing objects rather than as knowing claims about objects. Knowing is a relation between the knower and the known. The kind of responses that the knower must make to the known are not limited to affirming the right claims. Rather in

order to “truth” one must engage in activity in relation to the known. This can require such things as acting virtuously and avoiding vicious actions, or the activities of craft in producing goods.

3.4 Aristotelian truthing

In this dissertation I am concerned primarily with two aspects of Aristotle’s philosophy. The one concerns his discussion of truthing, which I take up in this section. The other aspect I focus on is his conception of the structure of ends—of how various goals and values are related to each other. This discussion comes at the beginning of chapter four. My primary source for both aspects of Aristotle’s philosophy is the *Nicomachean Ethics*, and references are to that work unless otherwise specified.

Aristotle uses a variety of terms for states and activities related to knowing and he often draws technical distinctions between them. When I use the terms “knowledge” or “knowing” in reference to Aristotle I will generally be using them in the broad sense that I have been using them throughout this dissertation rather than as Aristotelian technical terms. There is, however, an Aristotelian term that corresponds fairly well with the way I speak of knowing. This is the verb *alētheuein*, which is cognate to the noun *alētheia*, (truth). Standard English usage does not have a cognate verb for the noun “truth.” Thus, translators use such phrases as “grasps the truth,” “arrives at truth,”⁹⁹ or “reaches the truth.”¹⁰⁰ Unfortunately, these renderings may suggest that truthing is simply a matter of understanding or believing true claims. One author renders *alētheuein* more helpfully, if perhaps a bit restrictively, as “living truthfully,”¹⁰¹ In what follows I will stretch the English language a bit and use the terminology of “truthing.”

⁹⁹ Aristotle, *Nicomachean Ethics*, trans. Roger Crisp, Revised edition, Cambridge Texts in the History of Philosophy (New York: Cambridge University Press, 2014).

¹⁰⁰ L. H. G. Greenwood, *Aristotle Nicomachean Ethics Book Six with Essays, Notes, and Translation*, Reprint (1973 Arno Press, New York), Philosophy of Plato and Aristotle (Cambridge: Cambridge University Press Warehouse, 1909).

¹⁰¹ Gabriel Richardson Lear, *Happy Lives and the Highest Good*. (Princeton, NJ: Princeton University Press, 2004), 99 She intends by this term “to indicate a wide variety of ways in which a person may grasp the truth, only one of which is entertaining a true proposition. The verb *alētheuō*, which can mean ‘be right about’, indicates that *alētheia* (truth) can be attributed to the knower himself as well as to what he knows.”

For Aristotle, truthing is something the soul does. He identifies five states by which the soul truths in its affirmations or denials. These states are *skill* (or craft, *technē*), *practical wisdom* (or prudence, *phronēsis*), *scientific knowledge* (*epistēmē*), *intellect* (or understanding, *nous*), and *wisdom* (*sophia*). Craft is a state which involves correct reason and is concerned with producing things, be they bridles or other such goods (VI.4). Practical reason concerns human action as such, and so the activity of leading a good human life. Scientific knowledge is the state involved in demonstrations from first principles (VI.3). Intellect or understanding (*nous*) grasps first principles that cannot be demonstrated (VI.6). Wisdom is the combination of intellect and scientific knowledge directed at the most honorable things (1141b1-10).

These truthing states are forms of knowing, in the sense relevant to my project. These states by their nature involve a grasp of truth. Unlike belief or supposition, these states do not admit of being false (1139b10-20). We are never deceived about anything by these states (1141a1-5).¹⁰² I explore characteristics of truthing knowledge in the four subsections of this section.

Aristotle speaks of truthing as something the soul does, and he ties truthing directly to his analysis of what is distinctive of humanity and of the rational human soul. This connection goes via the idea of an *ergon*. *Ergon* is traditionally rendered as “function,” but it can also be fittingly rendered “characteristic activity”¹⁰³ (as by Crisp), or simply “work.” The *ergon* of something determines what it is to be good or excellent as that thing. For example, the good of a flutist, as a flute player not as a human, lies in playing the flute well. The human *ergon* is rational activity, since the distinctive capacity of humans is to act in accordance with reason (I.7). Thus, human excellence is excellence in rational activity. But the *ergon* of the human soul, specifically, is truth (*alētheia*). Thus when the soul truths, it performs its function or characteristic activity (VI.1-2).

Excellent rational activity is activity in accordance with the “excellences” or “virtues” (and it is helpful to keep both translations of *aretē* in mind). The truthing states are intellectual

¹⁰² Though this latter list omits skill.

¹⁰³ Using “characteristic activity” for *ergon* and “activity” for *energeia* does risk confusion, but it also reflects the cognate relationship between the two terms.

virtues since they directly concern how we think and reason. By contrast, character virtues are excellences of the part of the soul which is not rational in and of itself, but only in that it is controlled by reason. All the virtues are worthy of praise (1103a5-11). The virtues are not natural in the way that, for example, our senses are. While we have the capacity for virtue by nature, virtues must be developed, and the intellectual and character virtues are developed in different ways. Virtues of character, being excellences of the part of the soul that listens to reason, are developed primarily through habituation. Virtues of thought, being excellences of the part of the soul that itself has reason, are developed primarily through teaching (II.1).

Note that Aristotle thinks of truthing *as knowing and as a human virtue*. The truthing states are virtues of the human soul. Thus, we might classify Aristotle as a virtue epistemologist in the radical sense of virtue epistemology that Kvanvig hints at and Brewer advocates. Aristotle's discussion of truthing is found in his ethical writing and is an integral part of his understanding of the human good and what it is to be a good human. His discussion of truthing is not independent of those ends. Virtue theory is not brought in as a way to analyze what constitutes some independent notion of the proper subject of epistemology.

In the remainder of this section I make four points about Aristotelian truthing. First, truthing is not a subspecies of true belief. Second, truthing demands a variety of responses from the knower. Third, truthing is an activity in relation to the objects that are known. And finally, truthing involves the soul being like what is known.

3.4.1 Truthing is not a species of true belief

Wisdom, skill, and the other truthing states are not just beliefs that meet various qualifications like being true or being justified. Rather, they involve a grasp of reality that goes beyond having a supposition about that reality. Aristotle says the truthing states (*hexis*) (scientific knowledge, wisdom, intellect, skill, and practical wisdom) do not admit of being false. By contrast, belief and supposition are not ways the soul truths because they can be false (1139b15-18). He also says we are never deceived about anything by the truthing states

(1141a1-5).¹⁰⁴ On a certain deflationary reading this would be only a verbal contrast, and belief and supposition would be the same kind of conditions of the soul as are the truthing states. The difference would be that belief and suppositions are terms that leave open whether or not the agent is correct whereas the terms for the truthing states indicate that the state in question is correct.¹⁰⁵ I think Aristotle's wording more naturally suggests that it is the nature of the state and not the nature of the term that explains why we are not deceived by craft, wisdom, practical wisdom, intellect, or scientific knowledge. The varieties of truthing are varieties of knowing quite different from the contemporary conception of propositional knowledge which understands knowing as having beliefs that are true and have an appropriate basis.

It is worth noting that Plato says similar things about the difference between knowledge and belief, even belief of impeccable credentials. In the *Theaetetus*, Socrates argues that knowledge cannot be true judgement. As proof he cites the fact that juries can be brought to true judgements about things which can only be known by eyewitnesses. It is not necessary that they be taught (and so come to know) these things in order to form correct judgements. We might perhaps think that the reason the jurors do not know is that their belief is unjustified because of lawyers using bogus methods of persuasion. However, Socrates indicates that in these cases the jurors did their job well, which presumably means that they appropriately evaluated the arguments and testimony which they were given. (*Theaetetus* 200e-201c). In *Republic V*, Plato distinguishes *doxa* (belief or opinion) from knowledge on the grounds that knowledge is not fallible, but belief or opinion is. It is clear that he is not making a mere verbal stipulation that we do not call beliefs knowledge unless they are true. For, he uses this distinction to argue that knowledge and opinion must concern different kinds of objects (*Republic* 477d-478a).¹⁰⁶

¹⁰⁴ Though this latter passage does not mention craft.

¹⁰⁵ Compare L. H. G. Greenwood says, "This infallibility then, which has caused the editors so much trouble, is a notion brought in, rather clumsily perhaps, to distinguish between the names of virtues and the names of states that may be good or bad." He cites 1140b13, 1140b31, and 1142b33 as instances of one of the truthing states (*phronēsis*, *epistēmē*) being called a supposition, but these states could very well, include or necessarily result in suppositions without being simply a species of supposition. *Aristotle Nicomachean Ethics Book Six with Essays, Notes, and Translation*, 179–80.

¹⁰⁶ The surrounding passage gives much more evidence that knowledge and opinion are two quite different things.

The Platonic precedent reinforces the idea that the truthing states differ from correct supposition (true belief). However, my reading of Aristotle's statements about truthing ultimately depends how he substantively characterizes the truthing states. I discuss this characterization of truthing below. Section 3.4.2 reveals that, in the case of practical wisdom at least, truthing involves choice and action, and correct desire. Correct and justified beliefs do not suffice. Section 3.4.3 reveals that truthing is an activity in relation to the known and expressive of the *ergon* of the rational soul, something that would be strange to say of supposition. Section 3.4.4 reveals that truthing involves the soul being like the known and sharing in the goodness of what is known, which again, points to something more robust than correct and justified supposition.

3.4.2 Truthing demands a variety of responses from the knower

Aristotle can describe the truthing states as those by which the soul truths *in its affirmations and denials*. However, the activities of truthing are not limited to affirming or denying claims. This is most evident with regard to practical wisdom and matters of action. In book VII, Aristotle discusses various ways of failing to be virtuous. These include vice, incontinence (*akrasia*), and continence (*enkrateia*). A vicious person has bad character and sees his vicious actions as good. On the other hand, both the continent (“*enkratic*”) and the incontinent (“*akratic*”) have *correct supposition* concerning what should be done. However, their *character and desires do not align with* the virtuous course of action. Continent people take the correct course but do not have practical wisdom because of the deficiency in their character and desires. The incontinent (akratic) go against their correct supposition because of corrupt character and desire.

Aristotle finds akratic action puzzling in a way that we might not. This is because he takes practical knowledge to entail a readiness to act in accordance with what is known. Aristotle takes the akratic person to fail in knowledge, since he does not do the right thing. However, the akratic does seem to know what the proper course of action is, since he can correctly say what should be done. He, as it were, goes against better knowledge. So, the difficulty is that the akratic seems both to know and not to know the proper course of action.

Aristotle suggests that the akratic agent *possesses* the knowledge that his behavior is bad but does not *activate* that knowledge. In his correct opinions about what he should do he is analogous to a drunk who can repeat a mathematical formula, even though he is in no position to understand and make use of the formula. Interpreting exactly what Aristotle's solution comes to is a difficult matter, but the essential point for our purposes is that Aristotle understands knowledge in such a way that failing to act knowledgeably can be taken to show a failure to (actively) know practical affairs.

Practical wisdom is activated in relation to the concerns of a good human life. This activity is not only thinking about a good human life; rather, it is thoughtfully living a life. The practical counterpart to theoretical affirmation and denial is pursuit and avoidance; Aristotle sees pursuing the right goods and avoiding the bads as truthing. Truthing by practical wisdom means not only affirming that a certain thing is to be done, but also deciding to do it.¹⁰⁷ Further, as shown by his categorization of enkratic action, the virtue of practical wisdom also requires correct desires and feelings. Without them one fails to be fully virtuous and to fully truth. Thus, matters of ethics are about truth, and proper action and emotion is itself an expression of knowing parallel to the way in which speaking true claims is an expression of knowing.¹⁰⁸

On the one hand, this view of practical wisdom involves the whole person in the process of truthing and so helps to undercut any strict dichotomy between knowing and excellence in living. On the other hand, one might fear that locating the truthing in pursuit and avoidance rather than in affirmation or denial of claims undermines the cognitive character of practical wisdom.¹⁰⁹ Aristotle does raise and address this worry in VI.12. The puzzle is that practical wisdom may seem unhelpful and redundant since acting rightly requires character, not just knowledge and being a good person. Or perhaps one does not need practical wisdom

¹⁰⁷ Truthing by *phronēsis* does require, though, a reflective understanding of what is to be done and not merely acting from the advice of others, as shown by the treatment of the puzzle as to why *phronēsis* is necessary in VI.12-13.

¹⁰⁸ For a discussion of the worry that practical truthing stretches the notion of truthing too far see Richardson Lear, *Happy Lives and the Highest Good*, 103ff.

¹⁰⁹ For a fuller discussion of the worry that practical truthing stretches the notion of truth too far, and ways in which Aristotle's resolution of the puzzle addresses this fear see Richardson Lear, 103ff.

and could get by with simply taking the advice of a good person without himself being practically wise (1143b20-40). However, Aristotle says, practical wisdom is intimately related to virtue of character. There are natural virtues that one can possess without being practically wise. True virtue must not only accord with practical reason but also involve it (1144b25-30). And the relationship is reciprocal; one can be clever at pursuing various ends without having virtuous character, but one cannot have practical wisdom without virtuous character. So, the truthing expressed in practical wisdom's pursuit and avoidance is not mere acting from habit or mere acting on the advice of others, but rather, it integrates these with reflective understanding. It is worth noting the parallel with Ryle's account of knowing how. Both Ryle and Aristotle see knowing as expressed in right actions themselves but insist that for these actions to count as knowing they must be intelligent actions and not mere habit.

3.4.3 Truthing is an activity in relation to the known

One respect in which my discussion of knowing by participating-with in chapter five follows Aristotle lies in the way I think of various activities as ways of knowing. In this section I look at two discussions from Aristotle that unpack his notion of truthing and situate it in relation to other key Aristotelian concepts. Both his understanding of the role of something's *ergon* (characteristic activity) and his discussion of pleasure reveal that truthing is an active appreciation of the known.

In book I, Aristotle argues that the human good is "activity of the soul in accordance with virtue," or activity in accordance with the best and most complete virtue. This is because a good thing is something which fulfills its *ergon* well, and the human *ergon* is an activity of the rational part of the soul. Since the *ergon* is done well when it is done in accordance with the appropriate virtue, it follows that the human good is for the soul's activity to be in accordance with virtue (1098a7-19). In book VI, Aristotle applies this same schema in considering the *ergon* for two parts of the rational soul, rather than a human being as a whole. Truth (*alētheia*) is the characteristic activity (*ergon*) of both parts of the rational soul. The virtues or excellences of each part of the soul are, then, those states that allow them to fulfil their characteristic activity (1139b11-14). What it is to fulfil the *ergon* of truth (*alētheia*) is to

truth (*alētheuein*). The excellence of the one part of the soul is truthing in accordance with practical wisdom, which turns out to be excellence in the active life. The excellence of the other part of the rational soul is truthing in accordance with *sophia*, which turns out to be active contemplation of the most important things.

In book X, Aristotle situates pleasure in relation to function and virtue. He describes the pleasures of the senses thus: “Every sense engages in activity in relation to its object, and its activity is complete when it is in good condition in relation to the noblest of its objects.” The same schema applies to skills and to contemplation or thought. There is pleasure whenever both subject and object are in the best condition (1174b14-19). The musician “engages in activity with his hearing in relation to songs” and likewise the student does thinking activity in relation to whatever he is studying (1175a11-16). This analysis even extends to the crafts. Lovers of building enjoy their doings just as do musicians and geometers (1175a28-36). Practical wisdom is activated in relation to the best objects of its domain; it is not simply excellence in a craft but excellence in human and political action. Wisdom is defined as the combination of intellect and scientific knowledge as applied to the best and most honorable objects. So, contemplation will be pleasant because it is the activity of a part of the soul by its excellence in relation to its best objects. Aristotle elevates contemplation of God far above other human doings, but we should note that other more ordinary activities also count as excellent activity in relation to other objects. What we know through our activity is not limited to matters of Aristotelian theology.

Truthing is an activity in accordance with virtue and in relation to some aspect of reality. As discussed in the next chapter, more important objects mean that the soul truths in a greater way when it is acting in relation to those objects. For Aristotle, it is wisdom and practical wisdom that allow one most of all to truth, since they involve relating to the most important things in the world or the most important choices a human can make. One of my main tasks in the next chapter is to make better sense of the importance of knowing more ordinary or “lowly” reality than what Aristotle’s framework allows for.

3.4.4 Truthing involves the soul being like the known

Those virtues that enable the soul's excellent activity in relation to better objects allow the soul to truth in a greater way. So truthing derives its value from the object and requires appropriate responses to the object across the full range of response that is called for. As we noted, Aristotle divides the rational soul into two parts. This division follows the different kinds of objects that each is concerned with. The scientific part of the rational soul deals with things whose first principles cannot be otherwise, while the calculative part of the rational soul deals with things whose first principles can be otherwise. Aristotle groups the intellectual virtues by which part of the soul they are excellences of. Thus the truthing states are categorized by the nature of the objects that they enable us to truth in relation to. Craft and practical wisdom concern things which can be otherwise, while scientific knowledge, intellect, and wisdom are virtues of the other part of the rational soul which deals with things whose first principles cannot be otherwise. This division based on the kinds of things known indicates something of Aristotle's broader picture; the soul has to be sufficiently like its objects.

Craft is a state which involves correct reason and is concerned with production (VI.4). For Aristotle, production means that the activity has as its end some product over and above the activity itself. For example, the craft of bridle making is for the sake of producing a bridle; it is not done for its own sake. Such products are not good without qualification, since they can be misused or can be produced when one should be exerting energy toward something else. They are good only when the qualification is met that their use is subordinated to the human good. On the other hand, activities (in Aristotle's technical sense) have an internal end in the excellent performing of the action. Practical wisdom concerns action and thus making choices. Practical wisdom is thus concerned with the unqualified good of acting well overall. Practical wisdom is the virtue *par excellence* of the calculative part of the rational soul, since it allows that part of the soul to reach its highest good.

The three virtues in the other part of the rational soul, which deals with things which cannot be otherwise, work together. Scientific knowledge is the state involved in

demonstrations from first principles (VI ch3). Intellect or understanding (*nous*) grasps first principles that cannot be demonstrated (VIch6). Wisdom is the combination of intellect and scientific knowledge directed at the most honorable things (1141b1-10). Wisdom is the virtue *par excellence* of the scientific part of the soul.

Truthing by wisdom is the highest good for the human soul because it involves knowing, and thus assimilating oneself to, things more important than humanity. Contemplation is an achievement beyond any ethical achievement. Wisdom leads to happiness, not because it is an external means to happiness, but because its exercise constitutes happiness (1144a3-7). Practical wisdom does not instruct us in how to use wisdom but on how to facilitate the existence of wisdom (1145a7-10). In this way the discussion of intellectual virtues is a significant step in the overall project of the Ethics, the project of identifying human happiness. It focuses the contrast between knowledge of how to lead a human life and knowledge of the greatest things, by analyzing the two most central intellectual virtues of wisdom (*sophia*) and practical wisdom (*phronēsis*). Wisdom is a proper grasp of those things which are the best and most honorable simpliciter, while practical wisdom concerns a proper grasp of what is involved in the good that can be realized in one's activity. Book VI thus prepares the way for Aristotle's claims in book X that the highest human happiness is contemplation of the highest things.

Both wisdom and practical wisdom are concerned with the best of their respective domains. Wisdom is concerned with what is most honorable by nature and so has the same content no matter who is wise. Practical wisdom has to do with the goods achievable in action and so varies depending on the agent (VI.9). The activation of wisdom is primary eudaimonia, and it involves conforming the mind to the way things are and actively appreciating the most important things in the world. The activation of practical wisdom is secondary eudaimonia, and it also involves conforming the mind to the ways things are. The aim of practical wisdom is *to kalon*, the fine, noble, beautiful.¹¹⁰ Thus, both practical wisdom and wisdom are ways in which the soul truths by taking on the form of what is known and so being truthful. Truthing

¹¹⁰ Richardson Lear, 145 And more generally see her chapters 6 and 7.

in the practical realm means the soul takes on the form of practical truth. This does not mean taking on the form of particular choice-worthy ends such as protection from hunger, but the form of the fine, which reveals how such external ends are to be pursued. Practical wisdom has a physical component because the form of the fine cannot be taken on in the soul through unembodied intellect alone, but must be taken on by the agent as a whole in his choices and actions.

Aristotle is a realist about both theoretical wisdom and practical wisdom. It is not that theoretical wisdom concerns how things are and practical wisdom concerns how we want things to be. Both concern bringing the soul to take on the form of how things are. It is just that, in the practical case, bringing the soul to align with how things are and so to truth involves our actions and so involves the shaping of our surroundings and circumstances, whereas the truths contemplated by the part of the rational soul that has *sophia* as its virtue have forms that can be taken on by the soul in a purely intellectual manner.

I do not take up Aristotle's particular accounting of the knowers' likeness to the known. However, I do explore the theme further in my discussion of Polanyian epistemology and in my discussion of the various ways of participating with various realities.

3.5 Conclusion and prospective view

It is interesting to note that skill represents a highly qualified version of both wisdom and practical wisdom. Particular crafts involve knowledge of a subject matter independent of human agency and so require some intellect and scientific knowledge of that object, even if they do not require intellect and scientific knowledge of the greatest things which would constitute wisdom. Crafts also involve a grasp of the particulars and how to bring about a human goal, albeit only a qualified goal rather than the unqualified goal involved in practical wisdom. A blacksmith must understand the materials he is working with, but in addition to properties of iron and fire, he needs to grasp the particulars of how to shape this iron into this tool with these limitations. He needs a knowledge of the materials he is working with and a knowledge of how to manipulate the materials in this particular case. Further, he needs some grasp of the place of his art in human life. The way he shapes his products is constrained by

their intended role in someone's life. But as to whether these parallels point to a significance for skilled physical work that goes beyond what Aristotle himself can assign it...this will have to await the work of future chapters.

This chapter has examined a series of epistemological notions. These have been chosen because they highlight modes of knowing that do not fit well into analyses of knowledge that are centered around knowing propositions. In chapter two I argued that our conception of knowledge should be centered around the knowledge of objects or aspects of reality, and that we should see knowledge of propositions as playing a role within that bigger picture. In addition to their role in showing the limitations of accounts of propositional knowledge, understanding, knowing how, and Aristotelian truthing also serve to supply pieces of the bigger picture of knowing objects. My discussion of these is intended to motivate and provide resources for the picture of knowing by participating-with which I develop in chapter five.

Whereas chapter five explores participating-with in a variety of contexts of knowing, chapter six will focus with much more specificity on the intellectual goods to be found in skilled physical work of sufficient scope. But between this chapter and those chapters lies chapter four. Chapter four focuses, not on the kinds of contact with reality that count as knowing and thus as intellectual, but on issues related to the importance of knowing various things, and of the importance of knowing as related to other important things. Aristotle reappears in chapter four both because he interestingly ties the value of knowledge to the value of the known, and because he, also interestingly but in a way that raises difficulties for my project, systematically denigrates the value of work.

4 The Structure of Ends

In this chapter I step aside from directly developing my conception of knowing and take up the question of ordering goals and values. Chapter two argued that knowing is, fundamentally and centrally, about knowing objects or aspects of reality rather than knowing that some proposition is true. Chapter three discussed a number of thinkers whose work yields insight for what it is to know reality as an agent and through our agency. Chapter five develops the theme of knowing reality as an agent by exploring the significance for knowing of participating with the objects we would know. The present chapter, however, focuses on the other strand of my investigation, namely the structure of ends.

This chapter is devoted to the second task set out in chapter one in which I introduced two barriers that must be overcome to appreciate the intellectual value of skilled physical work. Chapters two and three have been oriented toward seeing our way past inadequate conceptions of knowing that form the first barrier. The present chapter is devoted to seeing our way past inadequate conceptions of the relations among values and goals. There are various worries about the value of craft as knowing that concern the structure of ends. Work activities are *instrumental* in character and thus oriented toward *producing* something else that is sought. Work activities are also *narrowly focused* on a small aspect of reality, and, focused on the features of that aspect of reality that directly affect the *production* of whatever object one seeks. These features do reveal genuine limits to the value of work as knowing, but they also tempt us to think of this value as much more limited than it actually is. While work does play a subordinate role in life, its value goes well beyond the *bare instrumental value* of making available other goods, or so I argue.

I discuss the structure of ends at this particular juncture for two reasons. The first is that I have just discussed Aristotle's notion of truthing (his term for the exercise of intellectual excellences) at the end of the previous chapter. Aristotle's account of such knowledge, as I noted there, integrally involves an account of the structure of ends and of the value of knowing that makes it very hard to appreciate craft as intellectually valuable. So, this chapter

continues my consideration of Aristotle and uses his system as a way of presenting the difficulties that an account of the structure of ends needs to avoid. A second reason to discuss the structure of ends now rather than later is that my discussion in the next chapter of knowing through participating-with responds to and partially addresses some structure-of-ends worries raised here. The structure of participatory activities parallels the structure of ends I take to craft to have.

The first part of this chapter explores Aristotle's account of the structure of ends and the way that this devalues work in general and physical work in particular. While few if any share Aristotle's overall system, the difficulties he raises for appreciating the value of craft *are* familiar and have wide resonance. Of course, it is also important to come to grips with Aristotle's views here, which are unfriendly to my project, precisely because I aim to use so much of his conception of knowing, which is tightly integrated with his view of the structure of ends. The latter part of the chapter responds to both Aristotelian worries and to more general contemporary worries about the importance of the ends pursued in skilled physical work. In the course of doing this, I sketch features of a positive view of the structure of ends. This positive view is spelled out further in chapters five and six, which concern, respectively, knowing by participating-with and some more particular goods to be found in skilled physical work of scope.

Section one details Aristotle's view as found in the *Nicomachean Ethics*. Section two restates, in more general and contemporary terms, the objections arising from the structure of ends seen in work. Section three sums up my response to these worries. Section four deals specifically with the notion of activities valued for their own sake. Section five explores the way in which good results can manifest the underlying goodness of the things that yield them. Section six explores the distinctive value of meeting our own needs, that is, the value of having to exercise our agency. Section seven discusses the value of knowing our particular environment. Section eight concludes with reflections on the importance of living in an intelligible world.

4.1 Aristotle on the structure of ends

Aristotle's treatment of knowing is integrated into a larger system that includes his devaluation of craft and physical work. In part, we might attribute this to aristocratic prejudice, but much of it is built into his system. Craft has a variety of features that make it less than desirable for Aristotle. It concerns particulars rather than universals. It concerns human rather than divine things. Craft must take its direction from political science and household management and so is not authoritative in that regard. The doings of craft are oriented toward meeting needs and are not done simply for their own sake. All these things make craft less than desirable for Aristotle.

Aristotle's low view of craft and physical work arises from central features of his system. As we saw briefly in the previous chapter, Aristotle ties the value of knowing directly to the value of the known, and he has a definite scale of value for things that can be known such that craft knowledge ends up near the bottom. But to unpack that scale, we need to understand his assumptions regarding what it means to do one thing for the sake of another and why something done for the sake of something else is always inferior to that done for its own sake.

4.1.1 Doing one thing for the sake of another

The opening statement of the *Nicomachean Ethics* is as follows, "Every skill and every inquiry, and similarly every action and rational choice, is thought to aim at some good; and so, the good has been aptly described as that at which everything aims" (1094a). This is indeed a fitting first line. The *Nicomachean Ethics* concerns the goods, and ultimately *the good*, that can be pursued by human beings (though Aristotle does not think all humans are fitted to pursue the same goods). All human activity, theoretical and practical, is oriented toward some good; but these goods are not created equal.

Indeed, Aristotle quickly makes two claims about the structure of ends—how the various goods that are sought in human life are related. First, whenever an activity has an end beyond itself, this product is better by nature than the activity which produces it. For example,

the end and goal of making a bridle is, precisely, a bridle. So, bridles are superior to the activity of bridle making. Second, whenever one pursuit is subordinate to another, the end sought by the ruling science will be more choice-worthy than any ends that are subordinated to it. Bridles again serve as an example. Since bridle making is subordinate to horsemanship, and horsemanship is, according to Aristotle, in turn, subordinate to generalship, bridles are less choice-worthy than handling horses well, and good horsemanship is, in turn, less choice-worthy than excellence in warfare (I.1).

A good that is produced by a practice is superior to the practice itself. For Aristotle, this follows from the fact that the product is subordinated to and for the sake of the (produced) good. For, the activity is not done simply for its own sake, but for the sake of the product. In a similar way, the end that is sought by a subordinate pursuit is valued, not only for its own sake, but also for the sake of the higher pursuit. For this reason, the end sought by a subordinate practice will always be less choice-worthy than the end sought by the higher and more authoritative pursuit. It should be noted that these two strictures place definite upper limits on the value of crafts and of physical work. Their value must be less than that of whatever goods they produce or of whatever pursuits they are subordinated to.

These principles of end structure are evidenced in Aristotle's argument that *eudaimonia* (happiness) is the highest human good. Wealth and honor are not properly sought for the own sake, but because of what they allow one to do or indicate about oneself. Virtue is sought for its own sake, but it is also chosen for the sake of something else, namely happiness (I.5). The superiority of happiness is seen by its completeness and self-sufficiency. Happiness is most complete because it is chosen for its own sake and is not chosen for the sake of any further thing. Happiness is also self-sufficient since it by itself suffices to make a "life worthy of choice and lacking in nothing" (I.9).

Aristotle draws a technical distinction between activities and processes. This concerns the relation between the doings involved and good sought by those doings. Processes are not complete in themselves but are aimed toward making some product. Whether this product is bridles, food, etc., the good that is sought is something external to the human doings involved

in the process that brings it about. On the other hand, activities are complete at any stage. Activities have their end or goal in themselves. Activities are done for their own sake, and the good they are oriented toward is excellent activity itself. Quite clearly, the doings of physical work are aimed at some product beyond the mere doings. One does the work of shaping a piece of work in order to obtain a finished good or tool of some sort; likewise with other jobs, whether installing sewers or baking bread. By contrast, Aristotle's prime examples of activities are contemplation of great things and living a life of virtuous action (as a free man, who is at some remove from the direct provision of his own needs). Contemplation and virtuous action are said to be done for their own sakes rather than for external ends. Aristotle has an exceedingly high view of these activities, locating happiness in their exercise. By contrast, his view of processes is indicated at the opening of the *Ethics* by this claim that the product is always better than the process that leads to it.

4.1.2 What's more honorable than what

For Aristotle, there is an important distinction between things the first principles (*archai*) of which admit of being otherwise, and things which have first principles which do not admit of being otherwise. Some things vary and are subject to change and other things are not. This unchangingness indicates their greater nobility and honor. Perhaps the easiest way to indicate what falls into each category is via the intellectual virtues needed to truth with relation to each. Recall that practical wisdom and skill are virtues of one part of the rational soul and that scientific knowledge, intellect, and wisdom are excellences of the other part of the soul. Though Aristotle places a gulf between craft and virtuous action, both concern dealing with particular concerns or situations and working to fulfil human purposes. They deal with changing things and involve making changes. By contrast, scientific knowledge has to do with deductions from first principles and intellect with a rational grasp of those first principles. Wisdom is the combination of intellect and scientific knowledge regarding the most honorable of the things that do not admit of being otherwise. These latter virtues do not seek to change the world, but simply to understand it. We might say that the division of objects is between the objects of *study* and the objects of *doing*. While it has a general

metaphysical foundation, the distinction is not strictly about the nature of the different objects of knowledge. It can concern the aspect under which objects are known. A practical and theoretical consideration of the same object is possible. For example, Aristotle compares a geometer's interest in the right angle with the interest of the carpenter in the right angle. The carpenter is interested "in so far as it is useful for his work," while the geometer wants to know what it is in order to "contemplate the truth" (1098a30-34).

Not only are human doings and pursuits subordinated to their ends, they also take their character from the ends that they pursue. For example, Aristotle argues that excellence in political science (pertaining to the affairs of the *polis*), is superior to excellence with regard to an individual life. For, the human good for a city or people, which political science considers, is "nobler and more godlike" than the good for an individual.¹¹¹ Thus, even within the domain of the human good, Aristotle favors the more godlike good. Considerations of what is honorable interlock with considerations of what is subordinate and what is authoritative. For example, Aristotle also says that political science is the most authoritative, since it directs the use of other crafts and sciences within the city, including who should learn them and how much they should be studied. Political science both includes other pursuits within its scope of authority and concerns more honorable and important objects.¹¹²

Aristotle ranks theological and cosmological knowledge above any knowledge of human matters. The contemplative life, which consists in the exercise of wisdom, is better than a "simply human" one because it expresses the divine element in a person. Thus, we should seek to be immortal and live according to this highest element (X.7). Wisdom concerns the understanding of first principles and scientific knowledge of what can be derived from them, when these are directed at the "most honorable matters." Wisdom is the virtue of the part of the rational soul that deals with things that cannot be otherwise. By contrast, the

¹¹¹ Nobility and godlikeness will be cited in book X as reasons to prefer the contemplative life to the political life.

¹¹² Compare Aristotle's statement of a puzzle in VI.12. "...given that a productive science does govern each product and issue commands about it, it will seem odd if practical wisdom, which is inferior to wisdom is to be put in control of it." However, political science, though it makes prescriptions about everything in the city, including presumably some religious matters, is not authoritative over the gods. And practical wisdom, though it must provide for the exercise of wisdom is not authoritative over wisdom (1145a).

practical part of the soul deals with things which can be changed. Once again, considerations of which objects are more honorable than others interlock with considerations coming directly from Aristotle's views on the structure of ends. His reasons for identifying the greatest happiness with contemplation are much the same as his reasons in book I for identifying happiness as the human end. Contemplation is the activity which is an exercise of wisdom and concerns the most divine objects. The excellent exercise of wisdom is better than the excellent exercise of practical wisdom. Contemplation is only chosen for its own sake, whereas virtuous action in war or politics also has an external goal of securing peace or securing happiness for a people. A contemplative life is also more self-sufficient than a life manifesting the character virtues, since it requires less by way of society, and can even be practiced alone (albeit not optimally). Most centrally, the contemplative life is best because it involves the most divine and best element of a human being and involves the soul with the most divine and best of reality.

4.1.3 *Technē*, and its relation to *phronēsis*, and *sophia*

While there are important resources in Aristotle's thought for a high view of craft, there is also a very strong tendency to denigrate physical labor and production. Aristotle's discussion of masters and slaves in book 1 of the *Politics* is a case in point. Since slaves are possessions, they are instruments used by their owner. Some people are slaves by nature since their *ergon* is the use of the body, and that is the most they can do (1254b15-26). And Aristotle certainly does not idealize *conjoining* manual labor and the higher exercises of human potential. Rather, he states that nature wishes to distinguish slaves' bodies from free persons' bodies so that slaves would be useful for "necessary needs" (*anagkaian chrēsin*), whereas free persons would have bodies that are useless (*achrēsta*) for such purposes but useful (*chrēsima*) for a political life.

In the Nicomachean Ethics, Aristotle expresses the same contempt for the doings of slaves. Slaves neither share in happiness nor in a distinctly human life (1177a5-12). Similarly, Aristotle references those involved in business with disdain. He contrasts the friendships of youth, which are for pleasure, as involving more freedom (*to eleutherion*) than

friendships of utility which are for “common tradesmen” (*agoraiōn*) (1158a.20-25).¹¹³ A man who exemplifies the virtue of magnanimity will own, not “profitable and useful” things, but “beautiful and profitless” ones. For possessions that are beautiful rather than profitable for acquiring other things show a greater degree of self-sufficiency (1125a11-13).

However, there are Aristotelian reasons to assign some value to craft. One comes up incidentally in Aristotle’s attempt to explain why benefactors love the people they benefit. He draws an analogy with the love that craftsmen have for their products. A craftsperson is fond of his product for the same reason he is fond of his own existence, for the product is an actualization of the potential or capacity of the person who makes it. “What [someone] is in capacity, his product reveals in actuality” (1168a5-10). In order for the analogy between products and people one has benefited to hold, the craftsman must value the product for more than its instrumental value. And, as Michael Pakaluk notes, Aristotle is probably assuming that *qua* craftsman, the artisan seeks the good of what he is making rather than instrumental gains from it.¹¹⁴ While this doesn’t mean that Aristotle has a high view of *technē*, he does recognize that a craft has an internal reward. The craftsperson does not love the product simply because the product can fulfill his other needs (whether directly or through exchange), but because it is a (good) result of his activity and living.

Craft inhabits an area that straddles the divide between things that admit of being otherwise and things that do not. Wisdom paradigmatically concerns the most honorable things and not all the things that do not admit of being otherwise. Practical wisdom concerns the unqualified goal of human action and not all the things that can be otherwise. There is thus room between wisdom and practical wisdom, and skill seems to be one of the things that lives there. It concerns some things whose principles cannot be changed by human agency, but it concerns them with a view to exercising human agency. For example, one might know some kind of wood, but craft knows that kind of wood with a view to something like a table which

¹¹³ Cf. the varying translations of *agoraiōn*: “mercenary people” (Irwin), “businesslike people” (Reeve), and “sordid souls” (Rackham).

¹¹⁴ Michael Pakaluk and Aristotle, *Nicomachean Ethics. Books VIII and IX*, Clarendon Aristotle Series (Oxford : Oxford ; New York: Clarendon Press ; Oxford University Press, 1998), 186.

finds its first principle in the craftsman. Aristotle argues that wisdom and practical wisdom form the virtues, *par excellence*, of the rational soul, but he says little about the value involved in skill. Aristotle admits that skill is an excellence of the soul, but he nonetheless seems to treat skills as mere means to (sometimes) worthwhile products.

Aristotle's insights regarding craft knowledge as a way of truthing, and its ability to actualize the craftsman, are suppressed in his overall system by his strict hierarchy of goods and cramped conception of the relationship between processes and the results of those processes. For him, the eternal things are conceived as not moving and not producing. For that very reason he considers them better than humans. Similarly, activities which are in no way for the sake of meeting the needs of embodied creatures are for that very reason better than any doings which aim at meeting those needs.

4.2 A general statement of the difficulties

Few, in our day at least, subscribe to the Aristotelian system. However, there are considerations similar to those advanced by Aristotle that do have contemporary or intuitive traction. This section articulates some of those considerations and worries in general terms. Aristotle's *Ethics* serves as a particularly systematic presentation of these worries, but the general difficulties involved are not peculiar to Aristotle's system. Likewise, my response and positive view in the rest of the chapter responds to Aristotle, but it does not only respond to Aristotle. Problematic assumptions about the structure of ends are more general and more contemporary than that.

A dismissal of craft knowledge can come from various motivations. It can be elitist: craft is for servants, not important people. It can be a critique of myopia or the love of money and things: craft results in small souls and focusing merely on getting things. It can be an affirmation of the need for a broad intellectual vision and wide-ranging understanding, combined with a sense that craft is too narrow and focused only on a few particular things. What these reasons for devaluing craft have in common is a concern that craft pursuits and craft knowledge are the wrong sort of thing to be intellectually valuable.

One difficulty is that craft obviously is a means to meeting physical needs and wants and is not usually pursued when those needs or wants can be met in an easier way. Craft aims at results, and most craftspersons are glad when the work day is over. Craft is not done for its own sake, it seems, but for the sake of other things that we want. Craft may get us the means for engaging in such activities as boating, fishing, going to museums, riding roller coasters, or reading Plato. In any case, craft is often seen as only a means to other ends.

Another difficulty is that, even if we conceive of craft as a way of knowing, craft concerns only a small part of the world. Craft knowledge is not broad scoped like cosmology or physics, or even like economics or psychology. We may think that knowledge should be general if not universal. Knowledge that is worthy of the name is for scientists and “experts” of various sorts who can consider things theoretically and in a larger picture. It is for those who are free from urgent practical needs and can travel, read, govern, and philosophize, not for those whose energy and time is narrowly devoted to ploughing furrows, hammering iron, or excellently shaping drinking vessels.¹¹⁵

4.3 My response summarized

The remainder of this chapter responds to objections to seeing craft as intellectually valuable that concern the structure of goals and ends. (I am not directly concerned here with objections to the idea that physical work can be a form of knowing; my responses to those objections are found in chapters three and five.) I proceed partly with an internal critique of Aristotle. His approach requires us to distinguish between what we do for its own sake and what we do for the sake of something else. However, the differences between the end-structure of “activities,” such as virtuous action, and that of “processes,” such as the various forms of skilled physical work, are not as categorical as it may first seem. There is usually a more complex relation between the good of engaging in a human doing and the good that results from the human doing.

¹¹⁵ Compare Sirach 38:24-39:11

I argue that some human doings oriented toward meeting our needs and wants are rightly valued for their own sake, even though we would not perform them unless they brought about good results. We need to understand the work and activity involved in craft as having a value that is not limited to the value of the thing made. The value of welding knowledge, for example, does not simply reduce to the value of cribs or tractors or stoves. Nonetheless, welding is not generally worth doing, unless it is connected to making something of value. Without some worthwhile product in view, it will be pointless.¹¹⁶ Thus the end structure involved is where there are certain external ends that must be choice-worthy if the activity is to be choice-worthy, but, at the same time, the activity itself is valued beyond its contribution to those external goals.

This end structure seems strange within an Aristotelean approach to thinking about what is done for the sake of what, but it is an exceedingly common end-structure. Even many things Aristotle classes as *activities* (human doings done for their own sake, as opposed to *processes*, which are human doings done for the results they produce) in fact manifest an end structure very much like that which I ascribe to craft. This distinction between activities and processes anchors one thread of Aristotle's arguments that a life dominated by productive work is inferior to a life of political activity or of leisure. However, even those doings which Aristotle classes as activities typically aim at some sort of accomplishment. For example, courageous action on the (defensive) battlefield aims at protecting the city.

We can also turn the tables on Aristotle and insist that good results may show the goodness of the activity, rather than showing it to be subservient to our "lower" needs. His predecessor, Plato, proves helpful. Plato says that the best goods, of which knowledge is a paradigm, are valued both for their own sake and for what comes from them. This suggests that we should differentiate between merely instrumental usefulness and usefulness that makes manifest the goodness of the activity. Craft, I will ultimately argue, belongs in the latter class of goods.

¹¹⁶ Unless, of course, there is some other point such as learning to weld so one can weld other things in the future.

Work knowledge is also valuable because it concerns understanding our local environment within which we live and work. There is particular intellectual significance to knowing the particular part of the world one interacts with and depends on, which is independent of the overall importance of that part of the world. In the next chapter, I explain some of the basis for this value in terms of participating with the known. In this chapter I explore this value in terms of living in an intelligible and understood world rather than in one we do not understand. The line of reasoning that I employ here draws from contemporary philosophers Talbot Brewer and Esther Meek. The guiding thought is that living well as a human entails navigating our world and our lives with understanding. But, if this is so important, our local environment must be an important object of knowledge for us. Elaborating this thought will necessarily include attention to what counts as our particular environment.

The remainder of the chapter is divided into sections as follows. Section four forms an extended analysis and critique of Aristotle's distinction between activities, (which are done for their own sake) and processes (which are done for the sake of a product or result). Drawing on the work of an Aristotle scholar and of a neo-Aristotelian ethicist, I show that the distinction is complicated in various ways and that there is less reason to reject craft on these grounds than it first appears. Section five reverses the Aristotelian mode of reasoning about activities by exploring the idea of fruitfulness, the idea that good results can show that an activity is good rather than showing, as Aristotle would have it, that the activity is base and subservient to results. Section six argues that there is a positive good to meeting my needs, and, more generally, to accomplishing things through my own agency. Section seven concerns reasons to value knowledge of the environment within which we live and act. There is a distinctive value to this knowledge that is not explained simply by the location of the realities which happen to be our environment in some global scale of importance. Section eight ties together themes from sections six and seven in a concluding reflection on the value of living in an intelligible world.

4.4 Activities valued for their own sake

As we have noted, Aristotle distinguishes between what he calls “activities” and what he terms “processes,” and this distinction plays a key role in his system which devalues craft. An activity is a human doing that is complete at any time. For, we seek the doing of the activity itself, not some expected result that will follow the activity. A process on the other hand, aims to produce a result. So, it is complete when, and only when, the result is achieved.¹¹⁷

It is not hard to motivate the activity/process distinction at a general level. We want to hike, not to have hiked, but we want to have walked from our parking spot to the store (and so arrived), not to walk that route. We want to sing a song rather than to have sung it, but we want to have a cleaned toilet rather than to clean a toilet (at least most of us). At a general level, it is also easy to motivate the claim that activities are better than processes. If what we want is the doing of something, there is a value that is not conditioned on the usefulness of the activity. If, on the other hand, what we want is the result that comes from having done something, the value is conditional on there not being a better or easier way to achieve that result. I go hiking for the sake of hiking—for its own sake. I walk from my car to the store so that I can be in the store—for the sake of a result or product. Walking across the parking lot is valuable as an instrument to my being in the store. Hiking, by contrast, is finally valuable; it brings a chain of instrumental justifications to end.

This characteristic of bringing justificatory chains to an end, or at least to a relative end, seems to support Aristotle’s claim that activities are better than processes. Fixing my car is valued as an instrument to driving to the hiking trail (among other places). Driving to the hiking trail is instrumental to the final value of hiking. Aristotle insists that the final value is always more valuable than any doing which is instrumental to that final end. It is indeed tempting to conclude that final ends are what life is really about and activities that serve to let us achieve these final ends are necessary evils or unfortunate hindrances to engaging in final

¹¹⁷ Aristotle’s distinction is helpfully presented and critiqued by Brewer. *The Retrieval of Ethics*, 121–29.

ends. But that conclusion is too hasty. Human doings that are done for their own sake oftentimes also involve striving to advance other results and other goods. In the remainder of this section we will see various end structures in which activities valued for their own sake involve seeking other results.

One way in which many activities sought for their own sake also involve seeking results is that activities are often progressive in character. One is striving to move from one phase to the next. A musician wants to achieve a level of excellence with one piece and then learn another one, often one that is more challenging in various ways. More generally, learning and exercises of capacity are oriented toward improvement and new achievements. If we make no progress in the activity it may seem objectionably “static” or “repetitive.” This is one dimension of what Brewer terms “dialectical activities,” which we will discuss in more detail in the next section. Of course, in some cases, these accomplishments are valued only as part of a hobby or other non-utilitarian pursuit and are not independently valued. Still, this phenomenon testifies to the value we place on accomplishing something through our doings, even if that something is self-improvement.

There is a more robust way in which Aristotelian activities involve aiming at results. David Pears shows that many activities depend on what he terms “external goals.” For Aristotle, acting virtuously is an activity that is done for its own sake rather than for the sake of something it produces.¹¹⁸ However, acting virtuously does require trying to achieve worthwhile goals. Pears clarifies this in regard to Aristotelian courage.¹¹⁹ Courage involves two contributory goals as well as an internal goal. The internal goal of the action is to act courageously (and more generally, correctly). The one contributory goal is the countergoal which is the harm to be avoided in the scenario (e.g. death on the battlefield). The other contributory goal is the external goal which is the good to be secured (e.g. protection of the city). The internal goal of acting courageously is not another goal parallel to the counter goal and the external goal. Rather it is the goal of responding correctly to the values indicated by

¹¹⁸ Acting virtuously is done for the sake of happiness, but happiness is not a separable *product* of virtuous action.

¹¹⁹ Pears, “Courage as a Mean.”

those goals. In most cases one does not just see that an action would be courageous but rather sees what a proper assessment of the contributory goals calls for, and it is characteristic of the courageous person to respond correctly to those goals.¹²⁰ According to this picture, one does indeed act courageously for its own sake, but one does not expose oneself to danger from the soldiers of another city unless there is something worthwhile to be gained by so doing. Remaining steadfast when it is called for is fine and noble, but remaining in danger with nothing to be gained is not.

This structure of ends gets us closer to what we need if we are to make sense of the intellectual value of craft. Whether or not it makes sense to do particular actions is contingent on the worthiness of the contributory goals, and yet the internal goal of the activity is to act courageously, and this is not subordinate to the external goal to be achieved or the countergoal to be avoided. The activity is done for its own sake since the internal goal is just to act well along the relevant dimension. The human doings involved in repelling invaders would be pointless aside from the need to repel the invaders and it would, of course, be better if such fights were not needed. As Aristotle notes, only a madman would attack his friends in order to have an occasion to display courage. Similarly, only a fool would burn down his house simply so that he could rebuild it. Building only makes sense when the building will serve some end without too great a cost to other ends. Aristotle says that courageous action is done for its own sake, and a similar case can be made for craft being done for its own sake.

In one way there is a better case for finding value in craft activities than in the activities of war. The structure of ends we are looking for in crafting activity differs from that found in courageous activity as conceived by Aristotle. Mortal combat is not behavior that is desirable in itself. It can only be represented as valuable for its own sake if it is seen as the concrete expression of making excellent choices and decisions. It is to be regretted if situations arise where making good choices requires such behavior. But we are looking for a

¹²⁰ Pears is particularly concerned with whether courage requires that the agent be right in his assessment of the external goal and the counter goal. He takes Aristotle to be clear that courage requires an accurate assessment of the countergoal (the danger faced), but he wishes Aristotle would be clear on whether courage also requires that one's assessment of the external goal be accurate.

different kind of value in the doings of craft; it is not merely that such work is sometimes the right choice, but that the occasions for craft are good.

Talbot Brewer employs a revised construal of Aristotelian activities. His notion of dialectical activities as the primary (perhaps exclusive) locus of activity valued for its own sake ends up being better suited for appreciating the value of crafts than is Aristotle's original distinction between activities and processes. Activities which are dialectical are ones that we only come to appreciate through engaging in them in an ongoing or repeated manner. Brewer offers philosophy and friendships as examples, but he thinks the dialectical structure applies to a range of common activities. The full and distinctive value of such activities cannot be appreciated from the outside or from the outset. Rather, one must experience the value by engaging in the activity if he is to understand the activity.¹²¹

According to Brewer, the value of a dialectical activity is never only instrumental. He argues that if the only value in play were instrumental, that would mean the activity was valued only for the end state it could produce. The end state would, then, have to be conceptually independent of the activity leading to it and so could, in principle, be obtained some other way. Thus, the relation between the activity and the valuable end would simply be that the activity causes the valued end state. A dialectical activity is, however, one that reveals its value as one appreciatively engages in it.¹²² One would hardly gain a better appreciation of the value of some conceptually distinct end state by engaging in some activity that produces it. So, Brewer argues, a dialectical activity must have more than instrumental value.¹²³

When comparing dialectical activities to Aristotelian *energeia* (activities), Brewer leans heavily on the idea that worthwhile activities should fit in a life *as it is played out over time*. He rejects Aristotle's distinction between processes and activities in favor of a distinction between doings which are only valued for what they bring about and doings

¹²¹ Brewer, *The Retrieval of Ethics*, 38–39.

¹²² Brewer, 39.

¹²³ Brewer's preferred term for such non-instrumentally valuable activities is "intrinsically valuable," but to avoid confusion with the more restrictive use of the "intrinsic value" to refer to things that are unconditionally valuable (Christine M. Korsgaard, "Two Distinctions in Goodness," *Philosophical Review* 92, no. 2 [1983]: 169–95) I will use the more awkward locution "non-instrumentally valuable."

“whose structure suits them to be constituents of the good human life.”¹²⁴ He thinks that Aristotle leaves out a large number of worthwhile activities because his official position does not recognize “narrative activities.” The point of one segment of a narrative activity can only be understood by reference to some goal at which one aims. Thus, narrative activities do not meet the strict Aristotelian requirement that they “contain their own completion in each of their moments.”¹²⁵ For, to make sense of the doings of the moment, one must see those doings in relation to a larger activity which extends over time. These activities involve pursuing and achieving goals along the way.¹²⁶

Brewer suggests that one can only fully understand the non-instrumental value of an activity when one has grasped its place in a good life.¹²⁷ Thus, the value of such activities is not an independent value which can be fully appreciated and yet poorly integrated into one’s life. Rather, to appreciate the value of the activity is to grasp how, when, and to what extent it should be pursued. Therefore, Brewer suggests that (some?) such activities have a dialectical quarry that is “a fully apt conception of what does and does not count as a good human life.”¹²⁸ This implies that all non-instrumentally worthwhile activities are ultimately aimed at a good human life.

¹²⁴ Brewer, *The Retrieval of Ethics*, 127.

¹²⁵ Brewer, 122.

¹²⁶ The focus on narrative activities and more generally on continuous advance in understanding activities and goods creates some tension with Brewer’s emphasis on appreciating values over and against producing instantiations of values. Christopher Cordner raises the worry that if dialectical activities are justified by their attempt to further grasp something and move toward attaining understanding, this introduces a new kind of production orientation. In making room for production oriented activities to count as dialectical, Brewer may have undercut more strictly non-productive activities. This is seen in his criticism of Aristotelian contemplation of truths already grasped. But many more ordinary doings have a celebratory aspect. Cordner argues that ritual actions (including quite everyday rituals) escape Brewer’s analysis. His point is both that many rituals are celebratory of some good without being dialectical and that understanding the value of many dialectical activities requires appeal to this celebratory ritual aspect and not just to the advances in understanding that come with it. Cordner argues that these ritual activities are saliently about, not the pursuit of further understanding, but continued appreciation and deepening love. Cordner’s critique is difficult to assess. He is right to call attention to celebratory activities that don’t need continual improvement to justify repeated engagement. Birthday celebrations don’t have to improve over the years to be worth an annual repetition. On the other hand, Cordner’s critique needs to be refined in light of the contrast Brewer draws between narrative activities and strictly instrumental activities. Dialectical engagement in an activity is supposed to be a mode of appreciation and the activity is justified as a mode of appreciation rather than simply as a means to a fuller achieved understanding. Brewer could also accommodate celebratory activities as dialectical in the extended sense that all activities are aimed at living a fitting life which is itself a dialectical activity. Christopher Cordner, “Dialectical Activity, Ritual, and Value: A Critique of Talbot Brewer,” *Philosophical Investigations* 39, no. 2 (2016): 178–91, <https://doi.org/10.1111/phn.12080>.

¹²⁷ Brewer, *The Retrieval of Ethics*, 41.

¹²⁸ Brewer, 41.

This emphasis on the role that activities play in a good human life opens the door to thinking well about the intellectual value of physical work. Work is, after all, one element of a human life, and work certainly involves the pursuit of goals. But, certain difficulties arise when the role these activities play in a good life is emphasized. Brewer originally identifies non-instrumentally valuable activities as those which have a suitable “structure” for a place in a good human life, but the requirement for an internal structure seems to fall away. An activity that on its face seems very undialectical could still be a dialectical activity by virtue of incorporation into a good life. In fact, Brewer allows non-instrumental value for an activity as routine and as clearly aimed at a state of affairs as washing dishes. Dishwashing can be done with “a vivid sense of its place in the human ritual of the shared meal and of intimacy with [fellow diners],” and it can become a “fit constituent of caring and intimate relations.”¹²⁹

If an activity is dialectical in virtue of being part of the larger dialectical activity of living a life well, this threatens to undermine the distinction between activities which are dialectical and those that are not. For if the quarry is a conception of a good human life, the dialectical character is no longer local to the particular activity, but is a property of the more global activity of fitting things together into a well lived life. On the one hand, this makes room for valuing much more of the work of life which does not involve a high degree of skill and ongoing development. On the other hand, part of my conclusion about the value of craft is that there is something about the *structure* of certain kinds of work that makes them valuable, and that their value does not stem only from their *necessary role* in a human life.

My argument about craft is not only that it is part of a life that is good overall. This could be true even of necessary evils. Rather, I want to see how craft can be a rich part of life, with its own interesting structure. Despite the threat of collapsing work activities into the master dialectical activity of living a good life, I believe Brewer does offer a helpful model for thinking about the activities of craft. From Brewer’s way of looking at it, the activity of theorizing the world properly involves movement toward further understanding and learning. Theorizing is valued for its own sake, but it involves pursuing other goods and it is good that

¹²⁹ Brewer, 128.

we have occasion to pursue such goods because this dialectical narrative activity is a way of appreciating various sorts of goods. The continued engagement with reality that takes the form of pursuing smaller attainments is a mode of appreciation. Craft may well provide occasion for such appreciative engagement with various facets of our world. This is what I aim to show with the account of knowing by participating with in chapter five and with the more specific discussion of craft in chapter six.

4.5 Good products showing the goodness of activities

It is time to consider a pattern of thinking about ends that differs more radically with the Aristotelian pattern with which we began. The Aristotelian pattern treats the fact that an activity accomplishes good results as a reason to think that the activity is subservient to and less important than those results. This broadly Aristotelian pattern is also contemporary. Consider the terms of our discourse about the value of the various studies in the university. We debate whether studies should be vindicated by their instrumental value in achieving other (truly important) ends such as enhancing technology, or enhancing student earnings potential, or, whether they should be vindicated by the intrinsic worth of such studies, apart from practical application. We tend to treat these as alternative rather than interlocking justifications. In the case of mathematics, we even divide the field into pure and applied branches, and the respective practitioners often see these approaches as rival rather than complementary.¹³⁰

There is an alternative pattern of reasoning about the value of activities and their products. This pattern allows for a greater harmony between the sorts of justifications for mathematical study given by pure mathematicians and the sort given by applied mathematicians. In this pattern we argue from the goodness of something's effects to the goodness of that thing. Such a pattern could be motivated by the thought that the producer is greater than the produced. Not only can good products tell us something about the "greatness" of their maker, they can also tell us something about the greatness of the skilled activity that

¹³⁰ This is noted and lamented by mathematician Jerry King. *The Art of Mathematics* (New York: Fawcett Columbine, 1992), 25–27, 110ff.

produces them. This reverses the presumption of the Aristotelian pattern of reasoning. While I will not argue that Aristotle's pattern never fits, it is not a safe general guide to thinking about value relations between activities and their results. While good results from an activity do not prove that the activity itself is good, very often they manifest the goodness of the activity.

The metaphor of fruitfulness is instructive. If we speak of, for example, a theory as fruitful, we do not mean that the theory is only valuable insofar as it contributes to our getting the fruit. Rather we mean that the fruit or payoff makes evident that the theory gets something right about the world. When we speak of effort in character formation as bearing fruit, we do not mean that the righteousness or virtue is only valuable as an instrument for external goods. Likewise, to characterize labor as fruitful is to praise it, not to demean it.

As a starting point for the second pattern of reasoning that aligns with the metaphor of fruitfulness, I turn to Plato. Plato seems committed to a general principle by which bad things produce bad and good things produce good, even though this is not always obvious in the short term. For example, in *Republic* X Socrates employs the premise that "the bad is what destroys and corrupts, and the good is what preserves and benefits" (608e). Also, in the *Meno*, Socrates infers that virtue is either correct opinion or knowledge on the grounds that virtue is good, and specifically that it gives correct guidance. Goodness implies consistent good results (correct guidance of action) (98e-99c).

A specific version of this principle comes up in the *Republic*. At the beginning of Book II (357a-358c), Glaucon asks Socrates to vindicate the value of justice based on what it produces by its own nature, that is, by the effects it has of *itself* on the soul. Such a vindication of justice would show that it is *itself* valuable and not just a tool or strategy that is generally useful. Glaucon elaborates by giving a three-part taxonomy of goods with varying structures of ends. One such structure is that of an onerous good. Onerous goods are choice-worthy only for their results. Those who view justice as an onerous good think the goal is acquiring goods for oneself with the least burden needed. So if, for example, I can acquire grain and wine, while you shoulder the burden of farming, so much the better for me; theft beats fairness. But, fairness beats being taken advantage of, and fairness also beats the

combination of taking advantage and being taken advantage of that most people would experience. So, on the onerous-good view of justice, it is chosen to avoid the worse evil of being taken advantage of, but since justice is not good in itself, what would befit the truly mighty is contempt for justice.¹³¹

Another end structure Glaucon mentions is that of activities valued only for their own sakes. But he does not class justice in this category either. Rather, this category contains what he calls harmless joys and pleasures. Justice belongs to the different category of goods that are valued both for their own sake and for the sake of what comes from them. His other examples of good with the same end structure as justice include knowledge, sight, and health. (The listing of knowledge here is particularly significant for me, since I am arguing over the course of the dissertation that the activities of physical work are a way of knowing.)

Both onerous goods and goods like justice and knowledge are valued for what comes from them. However, there are different relations between these goods and the respective things that come from these goods. When Glaucon speaks of the things that come from justice, he intends those that come from it by its own nature. For that reason, he restricts the consideration of the benefits of justice to those that come from the effect of justice on the soul and rejects the benefits that come from being *reputed* just. By contrast, onerous goods are valued primarily for the wages that come from them. Wages have quite a different relation to an activity than do the natural products or benefits of an activity. The natural result of a craft, and one's end *qua* craftsman, is the good directly sought by the craft, whether shoes, bridles, or cures. While the products of craft are external to the activity of the craft in the Aristotelian sense, Plato contrasts these natural results from an even more external kind of result, that of the money paid by a customer, or paid to the craftsman's helper.

We can categorize some results as *manifesting* the goodness of the activity from which they come. Paradigmatically, this would be things that come from goods like knowledge, health, and sight, although I extend the argument to some goods which Plato would class as

¹³¹ At least contempt for justice as it is normally understood. In Plato's *Gorgias* Callicles attempts to redefine justice as what is to the advantage of the superior.

onerous. Manifestory results show or display the goodness of that activity. Whether or not good results manifest the goodness of an activity depends on how the results are related to the activity. Not all good results are manifestations of goodness and so one cannot simply infer from the fact that the result is good to the conclusion that the thing behind it is good. One's success may manifest the goodness of his character, but success is not hard proof of good character; success of a sort may well be gained through vice. Nonetheless, if temperance, for example, results in good health and some degree of wealth, this may display and make manifest the goodness of that virtue.

This manifesting relation is similar to the manifesting relation employed in my discussion of knowledge in chapter two. There I pointed out that reality manifests itself to us in various ways and our cognitive contact with reality is mediated through these manifestations. For example, my cognitive contact with a barn may be mediated through seeing the front face of the barn. This in turn is mediated through light striking my eyes and through the whole apparatus of my visual system. In the good case, all these things mediate and manifest the barn to me. But, of course, things can go wrong. I might hallucinate or dream and only think I see the face of a barn. I might see a false barn face—a mere façade. The point is that the things I rightly take as manifesting a barn do not always manifest a barn, though they usually do.

The relationship between good activities and good results is looser than is the relation between reality and the various things we take to manifest reality to us. Good work can be frustrated by failure, accidents, or the evil actions of people, and so not yield good results. Or good results can come as much from fortune as they do from knowledge, skill, or effort.

Often the way the worker benefits from his work comes through wages or monetary profit. This makes the connection between the value of work and the benefit even more mediated. The bare fact that one receives good through a social reward system does not mean that the goods received make manifest the goodness of the relevant activities. The interpersonal and market dynamics that determine what receives a wage put a lot of slop and disorder in the connection between goodness and compensation.

Nevertheless, when all goes well, there is a manifestory connection between good work and wages or profit. Compensation is given for things that other people take to benefit them in some way. Generally, this indicates that the work does benefit those people in some way. Usually if what is compensated for benefits others, there is some excellence in the activity that produces it. This link between compensation and the value of work is parallel to the link between evidence and the reality we take it to evidence. Wages manifest the value of work in a way that is much more partial and sporadic than the way that good evidence manifests the reality it evidences.

In an economy of any sophistication, most of one's craft work is done for something like wages rather than for the direct use of one's products. The natural end of cobblery is good shoes and the natural end of fixing a car is a car rendered good once again. (Allow me to mix ancient Greek and contemporary examples!) But mostly the cobbler makes shoes for others and the mechanic fixes cars for others and they do so for wages. These are onerous goods on Plato's classification; they would not be chosen if not for the benefit that comes from them. However, I do not take their value to be exhausted by their contribution to getting paid. Division of labor and the resulting exchange of goods are fundamental to the domain of craft. Fortunately, even wages can serve as manifestations of the goodness of one's activities. Or, at least, they can if we broaden Glaucon's criteria for which results from activities come from the activity itself.

There is good reason to consider more results as manifestory than Glaucon allows in his setup. He stipulates very restrictive conditions for evaluating what justice produces by its own nature. He allows the unjust man a reputation for justice and assigns the just man a reputation for injustice. The intent is to isolate the effects of justice from the effects of a reputation for justice. But a reputation for justice can manifest the goodness of justice, in similar fashion to how wages can manifest the goodness of work. Certainly, being just and being reputed just can come apart. However, some of the effects of justice and especially the relational effects are better seen as natural outcomes than as wages. One gains respect because one is just, not because one appears to be just. While one can appear just without being just,

this does not mean that when one is respected for his justice, the respect is due only to the appearance and not to justice itself. At any rate, in the conclusion of the Republic, Socrates and Glaucon agree that external rewards for justice are fitting and proper to it (612c ff.). And I say (with fuller justification coming in the rest of the dissertation) that, likewise, the wages of craft are often fitting and proper to it.

4.6 Actualizing myself through meeting my needs

Meeting one's needs (in part) through one's own work is a positive good. Meeting needs by work provides the opportunity to accomplish something of importance with one's agency and thus to know oneself as efficacious. It also lets us know ourselves in relation to our environment and our environment in relation to ourselves. Craft also includes a constrained creativity that involves putting our stamp on reality by making things that have their origin in ourselves.

Aristotle's own writings give resources for affirming the value of craft production in self-actualization. Aristotle says that craft objects have their first principles in the craftsman rather than in nature or in necessity (NE 1140a15). On the one hand, this seems a sensible reason to think that craft products lack a certain value that natural beings have (and perhaps also lack something vis-à-vis necessary beings). But on the other hand, producing objects that have oneself as their first principle or the source of their first principle seems a positive for human dignity and value. While Aristotle might work backwards from the relatively low value of the product to argue that the value of the process is low, we can argue from the fact that the product has some value to the claim that this manifests something particularly good about the process and person responsible for it as the *archē*. As noted earlier, Aristotle himself allows that craft products reveal their producer. "What [someone] is in capacity, his product reveals in actuality" (1168a5-10).

It is worth reflecting what human life would be like without needing to work (physically or otherwise) for our own needs. Any effort would be either a pure detached gift

for others¹³² or effort in an activity that doesn't produce goods which are of independent value and unavailable without work. This would be a life without material or financial constraint. No need to keep one's quarters clean or clothes organized or to do any work someone else might value enough to trade for. The absence of responsibility would imply a radical freedom without the need to respond to needs and with the only guidance what one found in some way worth doing for its own sake. One's engagement with any aspect of reality would be, in an important sense, optional and of one's own choosing. One's efficacy would not be tested by the crucible of results. Or rather it would only be tested in the crucible of results that were part of the activities one chose, which excludes a large category of results.

By contrast, having needs and needing to work forces us into relation with some part of the world or other and often into relation with particular parts of it. In a simple economy, we might need to learn to catch salmon or cultivate grain, to tan hides or cut trees. In a more complex economy the options are greater because the range of things that can be done for exchange with other people is much greater. But, even in a sophisticated economy, we are restricted by our context and by our particular abilities and training. Some things cannot be easily outsourced to others and we have limited opportunities for what kind of work we can do well enough to meet our needs. We must deal with certain realities, including material realities, and test our skills against them with the objective of producing something that will meet our needs.

Ultimately, we need to see how it can be good to have our needs met by our work. The work must meet our needs and so is aimed at (to an extent) getting rid of those needs. But the dependence on work and intelligence, in a word, on craft, is a good thing. This is a matter of agency, but it is also a matter of relationality. I must relate to my world in order to meet my needs and act in response to it. This relationality is an important part of knowing the things I interact with, as I argue in the next chapter.

¹³² A detached gift, because gifts for those in certain relations to us could be considered a need.

4.7 Knowing my environment

Allow me to approach the question of knowing our particular environment through the following passage from Esther Meek,

To be human is to care. To be a human is to be situated in a world and oriented toward it, ever reaching beyond where we are, made to care for it. To be human is to long to know, to knock persistently on the door of the world in which we find ourselves, to beg entrance and receive far more than we anticipate.¹³³

Most directly, this passage speaks against boredom, which Meek diagnoses as not caring. Boredom betrays literal carelessness of the things arounds us which should engage our thought and inspire our action. Boredom and lazy withdrawal evidence sickness, if not of body, then of mind. We might reply to Meek that the things around us are not worth caring about or that we can access more worthwhile things through absentminded contemplation of eternal truths (with the mind absent from its surroundings, not from the eternal truths!). Why should we not focus on the greatest things accessible to our minds rather than the things we must deal with to support our bodily existence? To make sense of Meek's call to care about our world we need to see how there can be particular importance to knowing our world just because it is *our* world and how we can hope that our particular world is indeed rich and rewarding to engage with.

It is worth recalling that Aristotle says that practical wisdom, as opposed to wisdom, varies depending on the kind of agent because it concerns the good of that particular agent. Wisdom concerns the greatest things in the world, a designation which is not agent-relative. Practical wisdom concerns what it takes to do well as an agent and so varies from person to person and from kind of being to kind of being. Practical wisdom requires a situated knowledge of one's self and one's world. It, like craft, deals with things that could be otherwise, that are contingent and susceptible to change. These things affect our action and our action affects them.

What makes something part of our world and what makes it close to us? Physical proximity is the most obvious way. These are the streets I walk, this is the food I eat, this is

¹³³ Meek, *Loving to Know: Introducing Covenant Epistemology*, 31.

the house I live in. However, there are other ways of being part of our world. These are the people with whom I live, work, and think. This is computer program I write code for. This is the history that my society has inherited. When we think of the contribution of craft to knowing our environment, we need to think of our environment not only in terms of physical proximity, but in terms of what our actions and projects involve and rely on. This extends beyond the physically proximate.

Part of the answer to why we should care about knowing our environment is that the way of knowing of finite and embodied beings requires us to start with our environment. This is explored in the next chapter which deals with the notion of knowing by participating-with. Here we want a different argument, not that we must start with our environment, but independent reasons to think knowing our environment good. After all, one might argue in a Aristotelian vein (though I am not aware of Aristotle making such an argument) that, since our environment is not usually the most important or interesting part of the universe, one *should* be bored by the world around him and attentive only to the possibility of knowing greater things.

Brewer provides resources for valuing knowledge of our particular context. He argues against Aristotle's claim that the highest good consists in contemplating with full knowledge the greatest things of the world and claims rather that intrinsically worthwhile intellectual activity always strives for deeper insight. Brewer doesn't deny the possibility of an activity that consists in contemplation of fully grasped truths as Aristotelian contemplation does, but he suggests that the static nature of such an activity would render it less suited for humans than an unfolding quest to understand.¹³⁴ He even cites Aristotle in this connection, since Aristotle himself noted that contemplation was more suited for the life of a god than a human. But, of course, Aristotle took the observation to tell in the opposite direction: since the divine life is better than human life, we should go for a divine life as far as possible.¹³⁵

¹³⁴ Brewer, *The Retrieval of Ethics*, 126.

¹³⁵ Although Aristotle does have various resources that allow him to embrace a human life.

Brewer, on the other hand, squarely emphasizes human life. He says the value of active understanding consists in “living with a continuous and vivid appreciation of the *world in which one’s life unfolds*” (emphasis mine).¹³⁶ Brewer explains the differential importance of various objects of understanding by “the centrality in one’s life of the actualization of that understanding.” Thus, there is particular value in understanding “the natural and social environments in which we spend most of our lives” since without such understanding we would spend our lives “moving through an opaque and disorienting world.”¹³⁷

4.8 Living in an intelligible world

It is important to us that our world be intelligible. We want to make sense of what is happening around us and how we fit into it. Knowing what goes on around us is part of what makes us at home in a place and no longer strangers. If it is valuable to be in a world that is intelligible it must also be valuable to intellectually grasp the world around us. If it did not matter whether we knew the world around us it would not be important that the world around us be intelligible. We would only need some intelligible world to think about that need not be ours. On the other hand, if the world we had to live in was devoid of interesting intelligibility, our lives would be deeply impoverished as well. The good of living in an intelligible world requires both that we know our surroundings and that our surroundings are intellectually good in various ways—that they are sufficiently rich and engaging. We want to act in an intelligent way in an intelligible world. That seems to be simply part of who we are as human beings. This requires a world that allows us to act in that way, and it requires a world that is valuable and worth acting in and with. We must be able to act with both efficacy and with sophistication or skill.

What kind of objects must be known if one is to know his own world? One will know the material bases of one’s life. One will know the interpersonal dynamics within which one operates. One will know the historical movements that inform the present, and the social dynamics that explain otherwise puzzling actions. The things with which one acts are many

¹³⁶ Brewer, *The Retrieval of Ethics*, 313n46.

¹³⁷ Brewer, 309.

and various, some close at hand, some faraway, some concrete, some abstract, but all of them are particular, restricted in some way.

This particularity is not to be deplored. Particularity and specific involvement are required for the kind of knowers we are. They are also required for our more general knowledge to have depth rather than superficiality. This is one upshot of the next chapter, where I turn to the pervasive importance of participating with the known and the distinctive contributions of participation that is physically and practically robust.

5 Knowing and Participating-with

Knowing often involves the knower *participating with* the known in some activity.

Participatory activities feature in a wide range of knowing situations. Sometimes the knower participates with the known in ways that are quite naturally labelled intellectual. Other times the participatory activity is something practical or physical and thus less likely to be termed intellectual. Sometimes a participatory activity aims directly at knowing, as is the case with such activities as observing, experimenting, or studying, or it may not. Other times one participates with the known in an activity which has something else, such as staying warm or transportation, as its direct aim. Across these variations, knowing by participating-with means encountering the known *through one's agency* as the characteristics or response of the known shape one's own activity.

Knowing other persons forms, perhaps, the most familiar example of knowing by participating-with. We are already used to distinguishing between knowing about someone and knowing them through work, play, or conversation. I use the knowledge of persons as a paradigm for understanding the value of craft as knowing. With persons, participation-with takes the form of interaction where the knower and the known respond to each other in a shared activity. Obviously not all participatory activities involve interaction in the literal sense, and not everything that can be known can deliberately respond to the knower. But even when only the knower is an intelligent agent, the activity is shaped by the characteristics of the known, and we come to know it in part through the way it responds to our actions.

I am concerned primarily with craft knowledge, with the knowing involved in skilled physical work of scope. Therefore, I have a special interest in participatory activities that are physical or that are practical in the colloquial sense of aiming to meet our wants or needs. But knowing by participating-with is in no way limited to physical or practical activities. This point is important because it shows that craft knowing shares a common structure with other forms of knowing that enjoy more recognition as knowing. However, the participatory activities of craft differ from many in that the participation is practically robust (because craft is work) and physically robust (because craft is physical). These kinds of participation bring

certain advantages for knowing. So, while this chapter emphasizes work-related examples, it also pays a good bit of attention to participating-with in other contexts.

This chapter is the theoretical heart of the dissertation in two senses. First, it develops the concepts and claims which I use to make sense of the value of craft as knowing. It both responds to the various objections to thinking of craft as significant knowing and prepares the way for the more specific discussion of the goods of craft that comes in chapter six. The second sense in which this chapter is the theoretical heart of the dissertation is that it reflects my attempt to give a satisfactory synthesis of the various matters explored in previous chapters of the dissertation. Knowing by participating-with is an epistemological notion that involves activities of various structures. For this reason, it brings together questions concerning the structure of ends and questions concerning the sort of contact between the knower and known that is needed for knowledge.

Structurally this chapter moves from developing an account of participatory knowing based on the paradigm of knowing persons to exploring various implications of knowing by participating-with. Section one explores the paradigmatic nature of knowing persons and uses this to develop the concept of knowing the known through one's own agency. Section two further develops my account of participatory activities and the knowledge that may come through them. In section three I present aspects of Polanyian epistemology and show how it contextualizes and gives a place for knowing by participating-with. Section four explores the role of teachers and explicit instruction with regard to knowledge by participating-with. Section five explores the connections with Ryle's notion of knowing how. Section six refines my claims about knowing through participating-with by carefully comparing it to the notion of understanding.

The final four sections deal more directly with potential objections to the value of craft, or rather, with approaches that allow us to get past those objections. Section seven exploits the structure of participatory activities in order to explain why activities chosen for the sake of other ends still often have significant value as knowing. Section eight explores ways in which working with something involves being like it and some worries about craft

that arise from that feature of knowing (who wants to be like a pallet?). Section nine explores the importance of knowing “narrower” things deeply, and often via participatory activities, if we are to know the broader phenomenon well. Finally, section ten shows how the importance of knowing by participating-with helps show the intellectual value of knowing my particular environment.

5.1 Knowing persons as the paradigm and knowing in our agency

Knowing persons is an accessible and helpful example for thinking about what it is to know various other objects and aspects of reality. We are already familiar with the idea of knowing persons through interacting with them. Knowing persons is also a paradigm of such knowing for more principled reasons. Knowing by participating-with is more completely exemplified with persons than it is with other objects of knowledge.¹³⁸ Knowing persons involves interaction and reciprocal self-disclosure in the full and literal sense of those terms, while knowing other realities usually involves more limited analogues. Interaction with persons is a full-fledged version of participation-with, and self-disclosure is a full-fledged version of responsiveness. Thus, thinking about how we know persons, brings to light more general features of knowing by participating-with.

Knowing persons involves literal “inter-action.” Interaction, in this strict sense, requires action by both parties that is intentionally linked with the other’s actions or intentionally responsive to them. This interaction allows seeing the person acting, but it allows more than that; it allows experiencing them *in and through one’s own action*. We need conversation, that is, verbal and articulate interaction, if we are to know someone at any depth. But we need interaction beyond simply conversation to know someone well. This could include such things as working or playing together, or more broadly, navigating various aspects of life together. Such activities involve enmeshing one’s agency with that of the other.

We can know another through our agency even in situations that are less than optimal for knowing such as situations of distance, highly mediated interaction, or hostility. Consider

¹³⁸ This may be because persons are more fully knowable than other things. Contrast this with the view that what is most fully knowable is our representations of things rather than things themselves.

geo-political interaction as an example. Before assuming a position of diplomatic and geo-political engagement with a foreign head of state, an aspiring diplomat or head of state will have some prior knowledge of a foreign leader. This knowledge comes, in part, through *observing that foreign leader's actions and responses to others*. Geo-political or diplomatic interaction, however, allows knowledge not just from observing the action of the other but through *knowing the other in one's own actions*. This occurs when one senses that the other's actions are directed toward him, and especially, in the encounter with the other's responses to one's own actions. The actions of the two are intentionally linked, sometimes in co-operation, sometimes in anti-operation. One can come to know the other figure better through repeated actions toward him and the responses they elicit or do not elicit. Of course, this is not to idealize knowing another through long- distance competition, but even in such situations one can know the other to some extent through his agency and not just know about the other.

Knowledge of persons in its fuller varieties involves not only interaction but also self-disclosure. Conversationally at least, a claim to know someone implies that I am also known by that person. And, indeed, knowing someone in one's own action usually demands reciprocal knowing.¹³⁹ This is in part because knowing persons is knowing agents who do things, so to know them is in large part to know their acting. If we know their acting through our own acting we are, most of the time, in the territory of mutual knowledge. But there is another reason why human knowing is paradigmatically reciprocal. When the knowing is reciprocal there is intentional and literal self-disclosure on the part of the known.¹⁴⁰ Persons choose implicitly or explicitly how willing they are to disclose themselves to others.¹⁴¹

¹³⁹ The reciprocated knowing may be quite limited. My interactor may be very inattentive, for example. I suppose that I could also know you through my action by interfering without being discovered. I might be able to consistently frustrate your plans and see you try to overcome the obstacles I planted, without you knowing me at all if you utterly failed to realize that your string of misfortunes was actually the work of some agent.

¹⁴⁰ Meek emphasizes self-disclosure of the known for all knowing. But when the known is not a person, or very person like, the self-disclosure cannot be literal and intentional. *Loving to Know: Introducing Covenant Epistemology*.

¹⁴¹ Presumably any interaction, even the limit case interaction of deliberately ignoring the other, involves some kind of self-disclosure, but one can certainly limit self-disclosure.

5.2 Knowing by participating-with

Persons are not the only reality we know through our actions and in our agency. This general model of knowing extends much more widely. Participation-with is a more general version of interaction, and responsiveness is a more general version of self-disclosure. Realities of all sorts respond to our action on them. Drill bits break, when bent, soft steel dents when hammered, and plants grow when appropriately fertilized. We in turn, if we are acting intelligently, interact after a fashion by responding to the things we are knowing by participating-with. For example, a trained hand will back off when the wrench begins to slip on the bolt.

The nature of knowing is determined both by the nature of the *knower* and by the nature of the *known*.¹⁴² What the known is like determines not only the content of our knowledge but also the ways in which it is possible to participate with the known. This is true even of variations among persons. Some display themselves more fully in extended verbal conversation, others in a fast-paced and varied social situation. Others may primarily reveal themselves through the doing of various projects. These differences reflect different personalities and concerns, and we must adapt parts of our approach if we are to know these different people. Likewise, when we leave the realm of persons our modes of knowing much change to match. Some animals will be much like persons, but much of what we know is strikingly dissimilar to persons. Plants, ecosystems, tractors, and logical truths call for different modes of knowing. We can know all of them in and through our agency, but the ways we can participate with them vary. For, the ways they respond to our actions vary, as do the sort of actions to which they respond. And, of course, the ways in which we must be responsive to them if we would know them vary as well.

At the broadest level, we can think of participating with some object or aspect of reality as *taking part in some activity or process in which that reality also plays a part and shapes the agent's action*. For example, two people can participate with each other in a

¹⁴² The nature of (an instance of) knowing is also, of course, determined by the nature of the mediation of the knower's cognitive contact with the known.

conversation about hammers. Such conversation contributes to knowing one's fellow participant. One can also participate with a hammer (and with a nail and a board) in driving a nail and so know the hammer (and the nail and board) via participating with it. The hammer's characteristics shape how the activity goes in a way comparable to shaping of a conversation that comes from the interlocutor's comments. One must adapt one's muscular operation to the particular hammer analogously to how a conversationalist must adjust his comments in response to his partner. When we participate with something, we engage in activity that is shaped by the reality with which we participate.

Participating with the known is often very physical, as in driving a nail or driving a car, and, it is often intensely practical, as in completing a job to collect much-needed payment or getting an emergency heater running to survive the night in relative comfort. Physicality and practicality (i.e. relating to the meeting of needs) are two dimensions in which participating-with can be more or less robust. Physicality brings a more fully embodied participation. Practicality brings an urgency to our participatory activities and makes vivid their connection to the life we live. Physicality and practicality often go together, and skilled physical work lies within their intersection. But physicality and practicality are separable strands; softball is physical, and scheduling is practical. But these two dimensions in which participating-with can be more robust both involve specificity and particularity; the knowing involved does not focus on universal patterns or general truths as such, but on particulars or on the particular aspects of general realities that bear on the ends sought by the participatory activities. Craft activities, since they are forms of physical work, involve participation that is both robustly physical and robustly practical.

But neither robust physicality nor robust practical agency are required for participating-with. Participatory activities are pervasive across a wide range of our knowing. For example, higher mathematics is not a physical activity and is often at significant remove from urgent practical purposes. But rich mathematical knowledge is developed through participating with the realities involved by working problems and proofs. We come to understand the theorem through working out its implications and the equation through

manipulating it. Not all mathematical study involves directly proving theorems or solving problems, but thinking through a mathematical presentation or thinking about other things with mathematical concepts can also constitute participating with those realities (and with our fellow inquirers). Unlike driving nails or driving cars, the activities of working math problems or proofs, or just actively thinking about things mathematical, are described quite naturally as “intellectual” activity.

Acknowledging or articulating rules or descriptions and participating with the relevant realities are complementary aspects of knowing. “Textbook knowledge” apart from the learner doing something with the known is very shallow indeed. This point is ubiquitous and central in the literature on pedagogy, but it has been seldom emphasized in the epistemology literature, at least in mainstream Anglo-American epistemology. The shallowness of articulating the rules without actively participating-with is in no way limited to craft topics like cabinet making or auto repair. Having recently taught symbolic logic for the first time, I can attest to the importance of working with proof rules and proof techniques, if students are to achieve any robust knowledge of the inference structures involved. But philosophers also acknowledge the importance of participating-with in more typical philosophy classes—as demonstrated by their emphasis on class discussion and paper assignments that require students to reconstruct, object to, or propose arguments. But all of these activities are aided by well-articulated guidance. Knowing by participating-with does not mean hostility to propositions!

Participatory activities vary in the relations between their direct goal and the valuable knowing they involve. Intensely practical activities are directly aimed at some result like staying warm or obtaining grocery money. Work need not involve deliberately pursuing knowledge of the objects one is working with—save in an instrumental role. But this does not mean the activity cannot also be valuable as knowing. On the other hand, participatory activities can have knowledge as a direct goal, as do the exercises teachers formulate for their students. There is a spectrum between these as well. For instance, a mechanic might be excited to get to work on a new engine model, though he would not do the job if not for a

paying customer. The same range of structures holds for knowing people through interaction or shared activities. Knowing the other agent need not be a direct goal of the activity at all, as in interactions that are strictly transactional. Other activities, many recreational activities, for example, have as direct goals both knowing the other actors and achieving the other ends of the activity. Whereas some activities, such as intimate conversation, are conducted almost solely for the sake of knowing one's partner.

This notion of knowing by participating-with needs more elaboration and justification, but already some advantages should be clear. For one thing, the notion of knowing by participating-with provides a unifying frame for diverse modes of engaging with reality, from the abstract thinking of mathematics to the frustratingly physical process of learning manual skills. For another thing, knowing by participating-with recognizes that our cognitive contact with various realities can be mediated in many ways, some of which are more suited for knowing some objects than other objects, and some of which let us know the same object in different aspects. The responsive element of participating-with means that we are encountering and engaging reality itself, even though our contact with it may be highly mediated. Finally, it should be clear that the notion of knowing by participating-with helps us think well about the structure of ends. Participatory activities can be valuable as ways of knowing aspects of reality, even when knowing is not the direct end that motivates one to engage in the activity.

5.3 Tacit and explicit knowledge: Polanyian epistemology

There are two reasons to relate knowing by participating-with to Polanyian epistemology. First, I am not arguing that all knowing should be seen in terms of participatory activities but only that such activities are important across a wide range of our knowing. It is therefore helpful to notice the connections with a theory that is intended to be more comprehensive. Polanyi's epistemology provides a good framework for describing and situating knowing by participating-with. The second reason is related in that I take Polanyian thought to be very helpful in characterizing the knowing involved in the activities of skilled physical work. Polanyi starts from the context of discovery rather than the context of

justification. This means the starting question is not how one can (retrospectively) be sure he is entitled to believe a claim, but rather how one can *come to know*, that is, how one can *make sense of and grasp* some part of reality. This aligns with my attention to cognitive contact with an object that results in knowing reality to various degrees and (hopefully) in coming to know the object better through ongoing participation.

Polanyi promises to “reconsider human knowledge by starting from the fact that *we can know more than we can tell*” (emphasis his).¹⁴³ Since we can know more than we can tell, some of our knowledge must be tacit rather than explicit. This fact is obvious in our abilities to recognize and distinguish faces and in our ability to interpret facial expressions. We can do these things well without being able to describe how we do so or to describe the basis for our judgments. Explicit knowledge, as for example that Rachel is approaching, depends on other knowledge which is tacit; in this case, the tacit knowledge includes such things as the contours of Rachel’s face. According to Polanyi, the ability to make explicit sense of something depends on a large amount of knowledge that is tacit.

Polanyi intends his characterization of knowledge to apply to both “theoretical” and “practical” knowledge. He states that it encompasses both Ryle’s “knowing what” and Ryle’s “knowing how.” Tacit knowledge is evident in “the expert diagnostician,” albeit in “somewhat impoverished form,” as well as in scientific and artistic genius. Polanyi says perception is “the most impoverished form of tacit knowing,” but he uses perception extensively to illustrate the structure of knowledge. Knowing has a *from-to* structure. There is that which we attend *from* and that which we attend *to*. We *rely* on the “from term,” say sensory inputs, as we *focus* on the “to term,” say what we see. In order to focally know what we are attending to we must rely on what we are attending from.¹⁴⁴ We know that which we are attending from in what Polanyi calls “subsidiary” fashion.

Focal knowledge of what is perceived through our various sensory modalities or even through instruments relies on subsidiary knowledge of one’s own body.¹⁴⁵ The “art of

¹⁴³ Polanyi, *The Tacit Dimension*, 4.

¹⁴⁴ Polanyi, 6–10.

¹⁴⁵ Polanyi, 6–7.

knowing" includes the uses of tools, including probes and pointers and the verbal pointing of denotative speech. Skilled physical work will involve some focal knowledge of the objects one is working with, but it involves large amounts of subsidiary knowledge. Physical skills involve a high degree of tacit knowledge of the agent's body and the instruments of the skill. From this tacit knowledge, one is able to know other aspects of the world in a more explicit way.

Polanyian philosopher Esther Meek characterizes knowing as relying on clues in order to integrate one's experience into a pattern. She puts these clues in three categories, world clues, lived body clues, and normative clues.¹⁴⁶ I discuss the first two categories now and the third category, that of normative clues, in the next section. Consider first "world" clues. These are features of the (to be) known that receive my attention. They may be strange looking marks on a piece of paper or strange mannerisms in my interlocutor. If I integrate the clues, I can then *attend from* them rather than *attending to* them. I will focus on the hate expressed in the inscribed symbol or the nervousness of my interlocutor. When I know those focal aspects of the world the clues become intelligible, but they also recede from my attention like individual letters and words do when I am speedreading or typing with an extra degree of fluency. In all these cases I rely on subsidiary knowledge, whether this is of my body or of the alphabet.

For the most part we know our own bodies tacitly and subsidiarily. Meek refers to the clues of the to-be-known which come through our bodily experience as "lived body" clues.¹⁴⁷ This is knowledge in one's experience which is usually subsidiary rather than focal. I grapple to find my way through the doorway in the dark, thinking of the opening I feel and not of the position or feeling of my extended arm. Learning a skill, in sport or in craft, requires moving from direct attention to the movement and feeling of my limbs to incorporating that knowledge so that I can focus on, for example, the placement of the ball or the cutting edge of

¹⁴⁶ Meek, *Loving to Know: Introducing Covenant Epistemology*, 76 ff. Her chapter 4 as a whole forms an excellent reflection on Polanyian epistemology which has deeply marked my presentation.

¹⁴⁷ Meek, 77 She attributes the term to Maurice Merleau-Ponty; *Phenomenology of Perception*, trans. Colin Smith (London: Routledge, 1962).

the blade being filed. Knowing other things often involves these body clues and subsidiary knowledge of the body.

The emphasis on integrating clues and coming to a pattern by one's active thought does not indicate any kind of anti-realism. Rather, Polanyi gives an interesting indicator that can help assure us that we have discovered rather than invented something by our integrative feat. When we encounter something real we have a sense of "an indefinite range of unexpected manifestations."¹⁴⁸ Of course, this sense can be illusory; the veracity of our putative knowledge will be tested by continued experience. Real objects have more aspects to be explored, we cannot pretend they are some way because they are not made up; we must submit to them as they are.¹⁴⁹ This nicely shows Polanyian knowing as relating to a reality which we can continue to know better. Real things are not exhausted by the knowledge we gain by integrating the various clues that come to us. Knowledge can grow through continued attention, and I would add, participation-with.

It should also be emphasized that the very same thing can be known either subsidiarily or focally. For a preschooler learning the alphabet (or for me trying to decipher an obscure font to prove my humanity to a website!) a character like "a" or "b" will be known focally. But when reading with skill these characters are something I rely on without attending to. In certain contexts, principles like *modus ponens* or *modus tollens* receive our focal attention. In other contexts, we rely on them in our reasoning, attending not to them but to what we are trying to prove. The same point goes for propositional knowledge generally. We may focus on a particular proposition, or it may become part of what we think from.

5.4 Guides, words, and knowing the world

I must be careful not to convey the impression that words, propositions, and articulate communication are unimportant for knowing the world. Articulate verbal communication is

¹⁴⁸ Polanyi, *The Tacit Dimension*, 24.

¹⁴⁹ As we will see in chapter six, Matthew Crawford makes this contrast between artifacts we have made and designed and those made by someone else. He thus draws an epistemological and ethical distinction between making things and fixing or maintaining things. I would quickly add that even making things forces us to submit to the realities of the materials we work with. *Shop Class as Soulcraft: An Inquiry into the Value of Work*, 82.

very important for knowing, including for knowing those objects and aspects of reality that are best known through work. One topic that needs attention in this regard is the role of testimony and communication. Propositional knowledge can be transmitted from one person to another in a relatively straightforward fashion. True beliefs based on testimony do not always amount to propositional knowledge. But still, knowledge that something obtains with regard to an object can be transmitted from one person to another in a relatively straightforward fashion, whereas understanding, participatory knowledge, and the like cannot be so easily transmitted. But from this difference in transmissibility we should not conclude that knowing through participating with is a matter of an individual's experience without community or articulate conceptual thought.

For an explication of the role of communication and conceptualization in work knowledge, I pick up the third of Meek's clue categories, namely, normative clues. These clues regarding the to-be-known come to us through the words of other persons. Meek refers to direction given by others as normative clues. The descriptions we receive of the not yet known give us direction for what we are supposed to find, and, somehow, we find it. Meek uses the example of teaching her daughter to drive a stick-shift car. Directions regarding how to feel the clutch and the accelerator may be helpful, but they begin as almost opaque. The daughter must "climb into" those words and learn their meaning in regard to the car, the pavement, and her own body. Words from the knowledgeable cannot replace our own knowing, but as we move forward in trust of their words we may come to know what they know. Coming to grasp the words and coming to know the reality go hand in hand.

Meek's interpretation of Polanyi shows how our knowing process may begin with either participatory activities (Meek's lived body clues as well as some of the world clues) or with descriptions and propositional knowledge. In the *Tacit Dimension*, Polanyi emphasizes that learning from words and demonstrations requires the intelligent cooperation of the student. Meek emphasizes the potential for knowledge through heeding and following an articulating guide. We use another's words as clues and stepping stones toward understanding the thing those words are about. If the aspect of the world is sufficiently unfamiliar the words

will be almost meaningless at first. This applies when reading a thinker who uses unfamiliar concepts and categories, but also to new ways of employing one's body for profit or pleasure. The right words invite us to see and feel that reality which the guide already (partly) knows. Participating with the reality in question is one way to "world" those words, to have them become meaningful because one knows the thing that they are about.

The significance of a particular proposition varies depending on the nature of the object or aspect of reality to be known and the particular way in which one needs or wants to know that object. To illustrate this, consider the proposition that a certain ship, as currently loaded, has an above water height of no more than forty feet. This proposition is either true or false, and, if it is true, a given believer either knows it or he does not. Propositional truth or falsehood and propositional knowledge, as standardly construed are either/or, on/off, matters. But this on/off character of knowing specific propositions is superficial indeed with respect to one's knowledge of the ship, even when we focus only on the height aspect of the ship. The ship is no more than 40 feet in height whether it is three feet high or thirty-three feet high. Someone who knows that it is about three feet or about thirty-three feet also knows that it is less than forty feet high, but such persons would know its height much better than someone who only knows it is less than forty feet high. Similarly, to say that someone does not know the ship is at most forty feet high, says very little about how well he knows the ship with regard to its height. Perhaps he is utterly ignorant of its height. On the other hand, perhaps he knows the *ship* well enough to know *that* it is less than forty-one feet high.

Knowing a proposition tends to be an all or nothing matter; either I know that yonder tree is more than 30 feet tall or I do not. But knowing *things* comes in degrees; I can know a tree or any other thing well or poorly. Unless the object I am knowing is very simple, there will always be the possibility of increasing my knowledge.¹⁵⁰ The upper limit on what I could know of a tree, or of oak trees, or temperate forests is well beyond what I am likely to learn, at least in this life. Work can provide opportunity for continued knowing of the objects one encounters in work; this includes natural and built objects as well as other people. This will be

¹⁵⁰ Unless, of course, I am a very powerful knower.

partly expressed in knowing more propositions about those things. But it is also a matter of knowing the object better and in understanding better the realities described by the propositions one already knows.

Thinking of descriptions as normative clues helps us honor articulacy while avoiding a misconstrual of craft that would too sharply separate knowing and doing. On such a picture, craft knowledge is only to be found in craft theory, that is, in the descriptions of the materials and procedures of crafts. The practice of the craft is then considered something non-intellectual save insofar as one explicitly thinks the propositions in the doing of the thing. Recognizing knowing as primarily of objects allows a better understanding of craft as knowing. Through craft we encounter and participate with the known. This process is not unintelligent, blind, or merely derivative from a programmer like a self-calibrating computer. Nor is it a-reflective, though we need not and perhaps cannot have reflective access to all our knowledge. In excellent work the reflective element of knowing is integrated without conflict with the more bodily and practical modes of knowing.

5.5 Knowing how and participating-with

Chapter two discussed J.C. Ryle's conception of knowing how at some length (along with a prominent attack on his view by Timothy Williamson and Jason Stanley). Ryle argued that knowing how differed from knowing that in important ways, and that failure to respect those differences distorts our whole way of thinking about knowing. Knowing by participating-with has obvious affinities with knowing how as characterized by Ryle. In this section, I emphasize the helpful aspects of Ryle's discussion of knowing how and point to how his insights can be taken up in an account that emphasizes participatory activities and a Polanyian accounting of skill as a form of knowing. I also highlight some ways in which such an account must depart from or go beyond Ryle.

One affinity between knowing how and knowing by participating-with is the focus on activities. Ryle treats knowing how as intelligent *ability* to do various intelligent *activities*. His examples of such activities are diverse, including multiplication, chess, mountaineering, and marksmanship. The test of knowing how is in the doing of these activities. One's

cleverness or stupidity at, for example, chess is exhibited in the actual doing of chess activity—and not in affirming or denying maxims of chess strategy. But, though the intelligence is manifested in the activity itself rather than in descriptions or prescriptions regarding the activity, Ryle is careful to distinguish knowledge from mere routine behavior. Knowing how requires a certain kind of self-regulation in the activity. This sort of self-regulation requires that one deliberately performs the activity correctly and that one is intelligently responsive to changing conditions, whether to what is done by one's opponent, to new terrain, or whatever. This differentiates intelligent activities that require know-how from mere habits. Ryle says that in activities that are simply habitual "one performance is a replica of its predecessors," whereas in intelligent activities "one performance is modified by its predecessors."¹⁵¹ Though Ryle does not develop the point, this characteristic of intelligent practices points the way toward seeing know-how and exercises of know-how as ways of knowing other objects and aspects of reality. Intelligently responding to conditions as one performs skillfully sounds a lot like knowing those aspects of the world by participating with them in an activity.

A related affinity between knowing by participating-with and knowing how concerns the way in which propositional knowledge is placed within a larger context. Ryle does not just critique the view that knowing how reduces to knowing that. Rather, he subsumes knowing that under knowing how, at least insofar as knowledge that results from the *activity* of theorizing. He argues that the very capacity to form propositional theories, and to follow and understand the theories that others propose, requires knowing how. Ryle uses chess as an example. Following a game of chess is an exercise of the same knowing how capacity as is playing chess. Following and evaluating another's theorizing is similarly an exercise of the knowing-how capacity. (Incidentally, this points to the way in which knowing means the mind is taking on the structure of the known—in this case chess—a point Polanyi develops further and which I discuss in section nine.) So, knowing that comes within the context of the broader field of exercises of intelligence. This "being within the context of" has two

¹⁵¹ Ryle, *The Concept of Mind*, 42.

dimensions. The one dimension is that affirming propositions is situated among other modes of knowing and having cognitive contact with reality. The other dimension is that propositional knowledge is itself resultant of and expressive of something more fundamental.

A final feature that I wish to highlight from Ryle is the role of guides in coming to know. He notes that the difference between mere habits and intelligent abilities corresponds to a difference in how they are inculcated. Habits can be formed in others by conditioning and having them simply repeat the behavior till habit takes the place of thought. Intelligent activities are developed through training, that requires the trainee's intelligence and articulate instruction is often part of the process. Ryle also stresses that what might be learned by receiving explicit instruction can also be learned through a process of trial and error—as in someone learning to play chess by attempting moves and observing whether they are allowed or disallowed. This prefigures Meek's discussion of normative clues and their relation to lived body and world clues which we saw in previous sections.

As helpful as Ryle's discussion is, still we need to go beyond Ryle's theory of knowing how. For the most part this "going beyond" preserves and explains Ryle's observations. (Although I depart from the central element of Ryle's project in that I reject his logical behaviorist theory of the mind.) Most of the lines along which I further develop the notion of knowing how have been suggested in the preceding paragraphs. Most centrally, I want to show how intelligent activities are ways of knowing the world one engages and not just ways of knowing how to act in a certain fashion. Participatory activities allow us to know ourselves and the aspects of reality we participate with. They involve adapting our agency to the things we know and learning to think in accordance with the known realities. One who knows how to play chess, for example, can think in terms of chess. Participatory activities offer a mode of cognitive contact with reality that both makes use of propositionally articulated knowledge and undergirds propositional articulations of knowledge.

Polanyi's analysis offers the tools for thinking about knowing how to do something as knowing some reality. Exercises of skill *focus* on achieving some aim. One works *from* a certain knowledge of one's body and of one's material and instruments to achieve that focal

aim. Our bodies and instruments are known subsidiarily in that we rely on them to attend to the task or feat at hand.

5.6 Understanding and knowing by participating-with

As I discussed in chapter three, understanding has gotten renewed attention as an epistemological category. The accounts of understanding by Linda Zagzebski, Jonathan Kvanvig, and Talbot Brewer varied significantly, but there are commonalities worth noting. At a minimum, understanding is not isolated affirmation of claims; it is about an object as a whole, rather than only about a particular predicate or quality of the object. And, on many construals, understanding is of an object or aspect of reality rather than of propositions or some other representation of those objects or aspects of reality. While Zagzebski is willing to talk about understanding in reference to one's ability as a pastry maker, understanding often refers to more abstract and general knowledge, as is clearly the case with Kvanvig. Brewer seems open to expanding his account of understanding, but he is focused on what he calls the goods of theoretical reflection.

I argue that understanding in this sense overlaps with knowing by participating-with, but that the terms, at least as they are most likely to be understood, cover different ranges of knowing. In many cases, understanding and participating-with may come to the same thing. But not all understanding requires any robust participatory activity, and many robust forms of participatory knowledge do not fit the normal range of the term understanding.

For the sake of clear comparison, I draw a distinction regarding participatory knowing that parallels one which Brewer draws regarding understanding. He distinguishes understanding as a noun, an achieved grasp, from understanding as a gerund, the activity of appreciatively grasping and deepening one's grasp. The parallel distinction with participating-with is between knowledge achieved through participatory activities and active knowing in the participatory activity itself. For this chapter it is seldom necessary to mention the distinction. Both senses of understanding and knowing by participating-with are in play.

I begin by considering what it is to understand a person. Since persons are my prime example of realities that are known by participating with them, they make a helpful

comparison case. Understanding a person certainly implies that we have some handle on their character and that we see their actions as intelligible. After all, if one sees only another's behavioral pattern he does not understand the person. This remains the case even if he can make good predictions like, "Shealtiel will scream at his kid because the kid ate all the remaining goat meat" or "Zerubbabel will stack stones on the temple site because Haggai told him to." The *mere* capacity to observe patterns of this sort does not mean the knower has understanding. One who understands must at least grasp an intelligible pattern to such behaviors, whether this is a grasp of what about eating the last piece of goat meat provokes Shealtiel or a grasp of how Zerubbabel sees it as good to heed Haggai.

Often times such understanding will have come through some robust participatory interactions, but it need not. And robust participatory interaction involves knowing that is not normally classed as understanding. Understanding can be from the standpoint of the spectator, the analyst, the biographer, etc. Knowing the person through interactions is the standpoint of the friend, co-worker, lover, etc. These latter standpoints may or may not yield more understanding of the person than what is obtained by a biographer or similar observer and investigator. What they clearly do exemplify is a knowing by being with, associating with, and interacting with. One's agency is engaged with and even intertwined with the person one knows and with his action.

Understanding allows for a level of detachment that participating-with does not. There is more to knowing an elephant, for example, than the criterion of understanding would require. So excellent contact with reality goes beyond understanding. Or at least, for many objects of knowledge, knowing them requires more than simply understanding them. The nature of the object determines the specific kind of contact needed to know it. For some things, like pure mathematics, understanding and full knowledge seem very close to the same thing, since encounter and participation with pure mathematics would involve essentially mental exercises like deriving theorems and solving problems. But this is not the case with trees or persons or virtues. Here it is obvious that encounter and participation with these

things goes well beyond what we would typically call understanding and beyond activities that are stereotypically intellectual.

In some cases, participating-with may be very similar or identical to (active) understanding and the knowledge attained by participating with may be very similar or identical to a state of (achieved) understanding. Still, even in these cases, participatory activities are key and yield a richer or thicker form of understanding than such understanding as may be achieved with less participation. One knows something by solving mathematical problems and developing proofs and by doing other activities of math students or mathematicians that one does not know, if one simply gains an understanding by watching an expert mathematician explain, for example, mathematical induction.

In general statement, mathematical induction is surprisingly simple. To apply this technique, we need to have some defined series, whether this is whole numbers, prime numbers, etc. We then select a member of the series and show that it has a desired property. We then prove the conditional that if the n^{th} member of the series has this property, so with $(n+1)^{\text{th}}$ member of the series (assuming that n is the basis case or a later member of the series). This proves that all members of the series from the n^{th} member onward have the given property. The mathematical spectator may understand the particular proof being shown him by the mathematical expert as well as the general structure of such proofs, but until this person constructs or reconstructs such proofs himself, he will not know mathematical induction in and through his own agency. A skilled mathematician may be able to do this kind of reconstruction and mental participation-with as another mathematician shows him a new proof by induction. The ordinary knower will have to be forced to work through the problems and proofs without the guide if he is to participate with the mathematical reality on his own. So, even in such an abstract and “intellectual” pursuit our active participation yields greater knowledge, but the participating-with is generally neither robustly physical nor robustly practical.

One the other hand, even with something like mathematics, there is knowing to be gained by participating with that reality in ways that are robustly physical or practical.

Practical participation means using mathematics to manage our affairs and in work. This could be keeping track of inventory, reconciling one's books with a bank account, ordering the right amount of paint, doing complicated business analytics, etc. Physical participation with mathematical realities is especially pronounced in counting and in dealing with the geometry of things we work with. The possibility of either sort of robust participation shows us that mathematical knowledge is of *our* world. Part of what makes mathematics so intellectually exciting and important is that *the world with which we interact in our material lives* is so well described by such an intellectual and beautiful enterprise. The rich patterns of mathematics are patterns of the world and patterns we can use in knowing and shaping our environment. The equation $a^2 + b^2 = c^2$ is not only a theorem in some ingenious system; it describes, with the slightest of simplifications, our world. And, we can use it to work with our world. A similarly simple formula for triangles with a less useful central angle would still be elegant. But the simple usefulness of the Pythagorean theorem and such cool triples as 3-4-5 adds to its intellectual importance. When I use that triple to build something (as 6ft.-8ft.-10ft.), I am participating with a mathematically characterized reality in a way that is intensely practical and physical.

As the example of using a Pythagorean triple in a building project shows our working with the world and our exercise of practical and bodily agency may well lead us to use (stereotypically) intellectual operations. This can be a good thing; some will find their work that much the richer because it requires them to make careful measurements and mathematical calculations. I once saw a mechanic's forum recommendation to calculate how the expected compression ratio would have changed with prior engine modifications in order to diagnose a current problem. For one able to work with engines and modify them in ways that require mathematical engineering, this could add to the joy of the work. Not only is one getting the car to go faster and doing so by the careful use of hands and tools, he is also doing it by intelligent use of his mathematical capacity for abstract thinking. Work can be more or less rich not only as it involves embodied knowing, but also as it involves non-physical skills like mathematics. When the two are integrated there is potential for knowing our world and

environment in rich ways. This point regarding the “richness” of various modes of knowing is explored further in section eleven.

But usually when we think of knowing a car engine we will separate understanding and participating-with more sharply. For better or for worse, the term “understanding” makes us think of the specifications in the manual, the torque curves mathematically presented, the engineer’s calculations regarding temperatures and flows of oil, coolant, fuel, and air. On the other hand, the term “participating-with” brings to mind either the actions of repair and diagnosis or the actions of driving in various terrains and traffic with a foot on the throttle and a hand on the gear shift. The aggressive driver and the mechanic know different aspects or sides of the engine, but they both know it through their agency. An engine is emphatically physical and practical. Its purpose is to twist a shaft with a speed and torque that can be mechanically translated into moving the vehicle where the driver wants it to go when the driver wants it to go there.

When it comes to working on mechanical things, the material composition of components is as significant as their geometry. Shafts, heads, and hoses can break, warp, or burst unless they have the right strength and flexibility across temperature ranges. Tighten anything too little and you risk leaks or eventual failure. Tighten too much and parts may bind or break. These things can be expressed in numbers, and factory values, at least, are prescribed by engineers. But there is a way of knowing these things that comes only through one’s experience with bolts, clamps, and gaskets and with screwdrivers and wrenches. The more prominent the physical and practical character of the reality to be known, the more obvious the difference will be between understanding, narrowly conceived, and participating-with, and the less participating-with will look like a stereotypically intellectual activity. I have illustrated this here with an object of skilled physical work, but we should remember this is not an idiosyncratic fact about work knowledge. The point holds widely, as, for example, we saw with Aristotle’s discussion of ethical knowledge; acting temperately or justly is truthing, but such things are not stereotypically intellectual in the way that giving a theory of justice is.

We cannot limit important knowledge to the domain of understanding. For one thing, intellectual excellence demands knowing reality, and reality is diverse. If excellence in knowing is our goal, we will not have the dubious luxury of choosing only to know things which can be participated-with in the highly-intellectualized manner in which we participate with theorems and equations of higher mathematics. Any plausible account of what objects need concern us intellectually will include many things that require a practical and physical mode of participating-with. This claim is enough to show that the participating-with involved in skilled physical work is intellectually valuable, but it may not exhaust the importance of robust participation.

Perhaps more abstract and non-physical knowing (mathematics has been used as an example) demands that I develop characteristics and knowledge that only come through participating with my world in ways that are practical and physical. Perhaps knowing well in such abstract and conceptual fields is only sustained by what we learn and become through concrete encounters with the world. Why would we think that? Here are two suggestions that will be taken up to a limited degree later in the chapter. One is that our thinking and knowing is embodied and requires a trained body, at the very least, a trained brain.¹⁵² This kind of training might have to happen with a physical and (literally) manipulatable world if we are to learn abstract things well. Another reason lies in the fact that concrete, practical, physical things do not allow us to think that truth is of our making or that success can be defined by our wishes. The reassembled engine will either run or it will not. The newly carved handle either will or will not fit snugly. In the same way, our abstract beliefs and thoughts either fit and grasp reality, or they do not; however, it is easier to fool ourselves about such matters.¹⁵³ Physical and practical participation forces us to engage the world in ways that are not generally in focus when thinking about understanding, but perhaps these modes of engagement are needed for understanding to be what it should be.

¹⁵² Polanyi and Polanyian epistemology are key sources of insight here.

¹⁵³ This is a point repeatedly emphasized by Matthew Crawford. *Shop Class as Soulcraft: An Inquiry into the Value of Work*.

5.7 The structure of ends: valuing what is done to achieve something else

Prior sections elaborated the notion of knowing by participating-with and compared it to various more familiar epistemological concepts. This and succeeding sections address issues in the structure of ends and issues regarding the value of knowledge. Knowing by participating-with has a structure that makes good sense of some of the features of craft which give rise to the various barriers to appreciating the value of craft as knowing. The current section deals with the objection that craft is of severely limited value because of its *instrumental* character. Succeeding sections take up various forms of the objection that craft deals with the wrong sorts of objects, and thus is not intellectually significant. Section eight discusses the way in which knowing through participatory activities involves being like the known. Section nine concerns the relation between broader and narrower knowledge. And finally, section ten discusses the importance of knowing the environment within which we live and move and exist.

The task at hand in this section is to make sense of how skilled physical work can be valuable for its own sake, even when one would not choose to engage in it if not for its contribution to meeting needs (or enabling other pursuits). Aristotle, we recall, takes productivity as a sure indicator that a human doings are inferior. Those doings which are done only for their own sake, and not also for the sake of something else, are, therefore, superior. Human doings which are aimed at some product, be it bread, bridles, or beef, are decidedly inferior for Aristotle. In fact, he declares at the very beginning of the *Nicomachean Ethics* that such activities are always inferior to the product that they produce. The value of bridles or beef would thus set an upper bound on the value of the human doings oriented toward producing them. This I deny; the value of such doings is not limited to its contribution to beef, bridles, or bread. In some cases, the doings could be significantly more valuable than the products they are oriented toward producing.

The seeming irony here is that, though these activities have significant value which is not derivative from their products, they are generally only choice-worthy when they are worth choosing as a means to the product. This makes it understandable why some would object that

craft activities are only instrumentally valuable. After all, if they had a value that is not derivative from the value of their products, shouldn't it be common to pursue these activities even when they are not the best way to produce the product?

Two quick partial answers to this objection should be noted. First, people do sometimes choose activities of physical work even when this cannot be justified strictly by their contribution to products. Many things raised in home gardens, for instance, can be produced and distributed with far less expenditure of time, money, and even resources by larger scale farms and distribution networks. This holds true even if demanding ecological and health standards are applied. Yet many people choose to grow some of these crops themselves. This points to a recognition of some value that is not strictly derivative from the value of the product. Another partial answer to the objection is that there could easily be and often are situations where what it makes sense to do are determined by different categories of considerations. Beef-raising activities are, no doubt, valued for reasons other than the production of beef. But apart from the desire for beef, or what beef can be traded for, one might well pursue similar values through different activities. If this farmer were thinking of only non-instrumental values perhaps he would choose raising and recreationally riding horses rather than raising beef. In this case the reason that his choice for raising beef depended on its instrumental value would simply be that the same activity and use of time need to satisfy both instrumental and non-instrumental criteria.

But we need to make sense of a positive role for productivity. It is not enough to note that work activities are sometimes chosen for reasons other than their contribution to other goods and that, often enough, choices about what non-instrumentally-valuable activities to pursue are influenced or controlled by their value as productive activities. The previous chapter explored several approaches to vindicating the non-instrumental value of productive activities. One approach was to note Plato's statements that the best goods are both non-instrumentally valuable and productive. Another approach was to consider that even activities that Aristotle himself would consider valuable for their own sake often have an internal structure which involves pursuing choice-worthy goals. Participatory activities and Polanyian

epistemology allow an explanation of the relation between productivity and non-instrumental value that is similar to this last approach.

In participatory knowing, the knower participates with the known in some activity that is shaped by the characteristics of the known. This is the normal mode of knowing people, and it is a quite common mode of knowing other things. Remember that participatory activities do not always aim directly at knowing one's co-participants. Some interactions are chosen explicitly for the sake of knowing another person, as on dates, family reunions, and certain friendly get-togethers. But often the participatory activity will be chosen almost strictly for what it produces, paradigmatically work done for compensation. Such activities are often valuable for knowing other people, even though they are not generally chosen except for practical benefits. Our knowing of each other is centered around activities, and these activities generally have some other on which they are focused. Even when the explicit chosen goal is to spend time with someone whom we want to know, we often find it necessary to find some activity with an end of its own as an occasion for being together, even if the shared activity is as minimal as eating or drinking together. Even conversation, a paradigm of activity directed at knowing the other person, generally requires a subject of common interest to be discussed and pursued. It is a feature of large swathes of participatory activity with persons that the activity is chosen for some other end.

As with persons, so with many other objects of knowledge: the knowing comes in the course of an activity aimed at something other than knowing. Participatory knowing comes in the process of seeking some other end, whether one is primarily interested in the knowing or in the other end. Knowing need not be the *direct aim* of the activity in order for it to constitute a *significant value* of the activity. When the participatory activity is practically robust, as work is, knowing will not be the direct end.

In Polanyi's terms the knowing in participatory activities is often subsidiary rather than focal. According to Polanyi knowing happens *from* something known subsidiarily, *to* something that is known focally. That is to say, the knowledge of what we are explicitly focused on relies on other knowledge that is subsidiary and tacit. One of Polanyi's prime

examples is exploring by means of a probe rather than by sight. One knows the probe by using it to ascertain the walls of the cave. Eventually, the probe slips from consciousness as the focus is on the contours of the cave revealed by using the probe. The explorer knows *from* the probe *to* the cave walls. But knowing something else from the probe also means knowing the probe in a subsidiary manner. We should expand Polanyi's schema to allow the possibility that what is focal can be something other than knowledge, or at least something that is not primarily characterized as knowledge. Just as we can *know* from subsidiary knowledge, so also and more generally, we can *act* from subsidiary knowledge. Perhaps what is focal in some spelunking situations is simply returning home, and the knowledge of the caves contours becomes entirely subsidiary, as is usually our visual knowledge of a path.

In summary, the fact that work activities are usually choice-worthy only when they make some reasonably efficient contribution to other ends or goods should not be taken as a reason to limit the value of work to its contribution to those goods. For one thing, as a matter of fact, work activities are not only chosen for their efficient contributions to other ends. People do see, I believe correctly, other kinds of value in some of those activities. But, the main emphasis here is that, given the kinds of knowing often involved in work, it is unsurprising that activities valuable for the sake of knowing are generally chosen conditionally on their contribution to other things. For we are knowing these things by participating with them in activities in pursuit of other ends.

5.8 Being like the known: Aristotle, Polanyi, and participating-with

Participatory activities and Polanyian epistemology provide a way to make sense of the like-knows-like principle. Participatory activities, interpreted within a Polanyian framework, show one way that knowing involves the knower being like the known. There are multiple reasons to explore the like-knows-like principle here. First, the principle shapes Aristotle's account of truthing, and my account of knowing seeks to preserve many characteristics of Aristotelian truthing. The second reason involves two aspects: the like-knows-like principle helps to explain why participatory activities are important for knowing, *and*, participatory activities under a Polanyian interpretation, explain one way in which the

knower is like the known. (Though this is not necessarily an Aristotelian interpretation of the like-knows-like principle. Third and finally, the like-knows-like principle makes specific the worry that craft is intellectually dis-valuable insofar as it involves being made like base or trivial realities.

We may recall that Aristotle categorizes various truthing states (in our terminology “knowing states”) according to the kinds of objects they concern. Knowing different objects means having different states of the human psyche. Aristotle identifies five truthing states. Wisdom, scientific knowledge, and intellect (*sophia*, *epistēmē*, and *nous*) concern theoretical truth—that is, correctness in making affirmations and denials. They belong to the part of the rational soul that knows things the first principles of which do not admit of being otherwise. On the other hand, practical wisdom and craft (*phronēsis* and *technē*—also rendered ‘art’ or ‘skill’) concern practical truth—correctness in what we pursue and what we avoid. These belong to the part of the soul which knows things the first principles of which do admit of being otherwise. For Aristotle, the like-knows-like principle individuates truthing states and leads him to speak of two parts of the rational soul based on two categories of knowables.

The like-knows-like principle in Aristotle is also apparent in the way that one truths with respect to various objects. There are, in my terminology, various modes of knowing. For example, the truthing of *phronēsis* involves correct pursuit and avoidance, that is to say, correctly making choices. It is *not* merely concerned with correct declarations about what should be chosen or rejected. To know is to be shaped by the thing that one knows, here evidenced by one’s actions. This is a different mode of participatory knowing than is involved with theoretical knowledge of, say, astronomy. The different mode of knowing is required by the different nature of practical truth. It should be emphasized that this does not reduce truthing to mere habit or mechanistic behavior. Rather, *phronēsis* requires that the correct behavior comes from an intelligent and wholehearted grasp of the goodness of the choice. Another truthing state is *technē*, variously rendered as “art,” “craft,” or “skill.” This concerns correctness in producing things. This will involve its own mode of knowing distinct both from theoretical truthing and *phronēsis* truthing.

Aristotle tightly links the value of *knowing* with the value of the *known*. For this reason, wisdom is the highest intellectual state of the soul; wisdom is knowledge of the greatest and most important things in the world. This principle that the more valuable objects of knowledge yield more valuable knowledge also applies to ranking knowledge of those things that are subject to change. Practical wisdom is the greatest excellence of the part of the soul which deals with things that can change. That is because it deals with the best and most important matters in the realm of contingency and change. One way of explaining why knowing depends for its value on the thing known is to notice that knowing involves a conformity of the soul to what is known. For Aristotle, truthing requires the soul to be like what is known in whatever way is relevant based on the nature of what is known.

Polanyi's accounting of knowledge gives us a way to understand the Aristotelian point that the soul becomes like what it knows. (I do not present this as Aristotelian exegesis, of course, but simply as a way of making sense of the like-knows-like principle.) Coming to know is a process of integration and of finding a way of thinking. In the early stages toward knowing an object, the mind gains clues of various sorts. Perhaps the object to be known is a bear, but at first what I have are clues. These could be quite disparate: patches of color, strange movements, strange sounds, friends talking about a "bear," etc. To know, I must integrate these things into a pattern, I must discover bear-ness, or perhaps, Smoky. Coming to know means integrating the clues to discover the pattern. Of course, one can mis-integrate the clues, but then one does not know what one takes oneself to know. Successful integration finds the structure of the object or aspect of reality behind the clues. This differs from assembling the pieces of a literal puzzle by reference to the picture on the box. It is more like discovering a picture from the pieces, and in many cases like discovering a picture of something I have never seen before. In the process, my mind must gain the structure of this newly discovered reality.

This pattern of reality which is discovered, what Polanyi terms a "comprehensive entity," does not only serve as the answer to a given sets of clues. It also becomes part of how I think and perceive. This pattern shapes what I see in the future, until my mind is transformed

by further knowing which further changes me as a knower. The mind conforms to reality—to the object or aspect of reality which is known. Real entities are wont to surprise us because they have “a significance that is not exhausted by our conception of any single aspect.”¹⁵⁴ The reality of the thing is independent of our conception. But it is knowable. For, just as in comprehending a human performance such as a game of chess, our comprehension must share the structure of what we are comprehending, so also with our knowledge of reality in general. We comprehend chess, or any other human performance, by following it, by thinking it according to the same principles that the performer enacts it. And Polanyi says that in all instances of tacit knowledge there is a correspondence “between the structure of comprehension and the structure of the comprehensive entity which is its object.”¹⁵⁵

This idea of the knower being like the known includes participating with the known in a mode appropriate for its nature. As noted, Aristotle describes practical truthing as making correct choices. This is the mode appropriate for that kind of knowledge. I also stressed in section six the importance of physical participation for thoroughly knowing physical things. As an example, consider our knowledge of weight. One can know something of weight and weights without participating with them in a physical way. We can interrelate weight, mass, gravity, and acceleration and learn how to do calculations—in the style of high school physics. We can observe and study patterns of measurement and motion as measured by others. These things can constitute genuine knowledge; however, there is a distinctive way of knowing weight that comes by participating with physical things in a physical way as a physical being. This is the knowledge that comes from picking things up and carrying them (or unsuccessfully attempting so to do), and from various physical activities from mountain climbing to mucking cow stalls.

Given the explanatory target of this dissertation, it is worth reflecting on the ways that craft may come to structure our thinking and knowing. My most extensive experience involves working with wood. The staple methods involve cutting and fitting and fastening

¹⁵⁴ Polanyi, *The Tacit Dimension*, 32.

¹⁵⁵ Polanyi, 33–34.

together with nails, screws, glue, and occasionally bolts or staples. These skills are developed both through directions and through working with the wood, especially in failure. Some nails will bend and some will split the wood. Screws are also likely to split the wood they should secure, and they are also liable to spinning out in the wood or stripping out in their head. Working with these technologies one learns the ways of wood and the ways of things built with lumber, nails, glue, and screws. What perplexes the novice, becomes part of the thought patterns of the skilled. These things that were clues to a yet-to-be-known pattern of wood and what's done with it, become the basics from which the knowledgeable builder can knowingly work toward building some particular thing to fulfil the need of the moment. Only in novel and challenging circumstances need the builder reflect on whether a screw needs a predrilled hole. One's body and one's agency takes the form of the known, and this structures one's perception of the project.

This taking on the form of a craft or its materials does bring with it a danger. If one is not growing intellectually or is not sensitive to the new circumstances in which he should be coming to know new things, there is a real danger of treating other things as though they were the craft one knows. I tend to see the world as something to be cut, glued, nailed, screwed, or bolted. I think about solving problems and meeting needs in those terms. But some things call for a different approach, for example, the techniques of the metal worker such as honing, bending, or welding. The knowledge I do have of a certain range of materials and ways of working with them can cause me to miss other things I should be seeing.

Other ways craft can distort our seeing are more troubling. It may not matter that I think of fixing an item with bolts, while another thinks of fixing it with a welder; it does matter if I see trees only as sources of lumber and do not appreciate them in other ways. Seeing the world through a developer's mind might blind us to the need to let some spaces and places alone. Seeing the world through the eyes of a builder can get in the way of seeing how to respect the (perhaps strange, perhaps wise) wishes of the one for whom we are building. The problem here would be as much or more that one's seeing is structured by a limited set of *practical* skills as it is a matter of being *physically* engaged. If skill produces a

problematically narrow mind, it will come through thinking the world in terms of one's craft, when one should be appreciating larger human purposes and other values inherent in the world.

5.9 Knowing the broader through the narrower

Craft knowledge is limited in scope. For one thing, there are far more potential objects of craft knowledge than any one person could possibly know. I cannot be a computer programmer and a hardware engineer and a fisherman and a plant farmer and an animal farmer and a forester and an electrician and a tailor and a cook, etc. At most it makes sense for me to be a few of those things with some degree of excellence or an amateur at a handful of them. Also, craft knowledge is limited in scope simply by its physical and practical character. Even if one could be a master of all trades, this knowledge would still be limited by its physical and practical character. The master of all trades has different concerns than the philosopher, the scientist, or the literary critic. He is not so concerned about grasping wholes and knowing reality in a broad and systematic sense. This might be thought to indicate that craft knowledge is unimportant or of low value as knowledge.

There are several things to be said in reply to this worry. For one thing, I am certainly not advocating a life where one's knowing comes only in craft. There is indeed a danger of the craft-focused person becoming too narrowly focused, and this is an intellectual vice. However, the fact that one's vocation is craft, does not mean one must fall into that intellectual vice. Beyond these considerations, I want to respond by stressing the intellectual importance of narrow knowledge.

Narrow and specialized knowledge is important outside of the domain of craft. While there might be some general scientific knowledge that everyone should know, excellence in science demands depth in some specialization. Proper appreciation of many general patterns demands encountering them in greater depth in some specific subdiscipline. One is not a scientist unless one has immersed oneself in the details of one little corner of physical science. Similar points can be made for mathematics, or literary criticism: to get a PhD in English or Mathematics one must have done extensive detailed research in some topic much narrower

than those disciplinary categories. Two mathematicians will recognize each other as sharing a common expertise, even if their specializations differ significantly. Likewise, the kind of knowledge we need from craft can only be gained by depth in some particular craft and encounter with the aspects of the world with which that craft deals. If my craft is tilling the ground and growing crops, it will not give me deep, encounter knowledge with woodland ecosystems, but it might give me a more general intellectual benefit that is shared with the master forester.

Participating with a reality involves activity, whether this is the abstract and conceptual activities of working math problems or the practical and physical activities of craft. These participatory activities need to engage with something specific or narrow. So participatory knowledge requires a degree of narrowness. Insofar as participatory activities are important to knowing reality, narrow knowledge is important to grasping reality. Craft knowledge is an important way of participating with reality that enables and enriches more general knowledge of that reality. Of course, the proof of this claim is to be found in the pudding. The pudding is chapter six, which explores more specifically the various intellectual goods of craft.

5.10 Participation-with and the importance of my environment

In this chapter I have argued that participatory activities are pervasively important for knowing. Participatory activities of the physically and practically robust sort found in craft are important for knowing many physical things and, as we will see in chapter six, for knowing the social and built world in which we live. But for these claims to vindicate the value of craft, it must be the case that knowing the environment within which we must make a life is important. One reason to think that such knowledge is important comes from the preceding section. There I noted that general knowledge of any depth is anchored in more detailed and specific knowledge of things more particular. This is not to deny that we can know general truths without detailed and particular knowledge of some area within the scope of that truth; it is to affirm that knowledge of general truths without some depth in more detailed particular knowledge will be significantly diminished, even as general knowledge. This provides a route

to the vindication of knowing my environment because it is my environment, whether natural, social, built, or practical, that I can know through more robust participation. In this section I follow another lead, the idea that it is important and valuable to navigate my life and world knowingly.

Navigating my life and world knowingly entails two things. I must know the realities that affect my actions, whatever they might be. Those realities must also be rich enough that knowing them counts as knowledge in more than a minimal sense. I could fail to navigate my life and world knowingly either by being ignorant of the realities with which and within which I act or by living in such an uninteresting world that I cannot really be said to navigate it knowingly. Brewer is sensitive to these two facets of living knowingly.

An account of the good of knowing must depend both on what objects are important and worth knowing and on what kind of knowing experience is valuable and important. For valuable knowing that is (rightly) satisfying and represents a worthy accomplishment, we need both to know appropriate objects and to engage them in an appropriate mode. Consider this passage from Brewer which acknowledges both the need for our knowing to be adapted and matched to what is, and for the world to be suitable for being richly known by us.

[B]y its nature, [understanding] cannot come loose from the truth. One could in principle come to understand that the world admits of no (further) understanding. Such an understanding would not lose its intrinsic value simply on the grounds of its painfulness, but it would amount to the discovery of the world's inhospitality to (further) theoretical reflection, hence of the world's shortcomings as a fit habitation for beings who are inexorably drawn to theoretical reflection about themselves and their world (i.e. to human beings).¹⁵⁶

Brewer is focused in this passage on what he terms theoretical reflection. If we cannot understand the world in which we move and in which we live our lives we would not be, he thinks, in a fulfilling relation with the world around us. *As the kind of knowers we are*, we need the knowing mode of theoretical reflection.

This forces us to face two questions. First, what if our world is too impoverished to be worth knowing? And second, what if our world does not admit of being known in the way

¹⁵⁶ Brewer, *The Retrieval of Ethics*, 312.

that we need for a suitable intellectual life? Brewer argues that a world not suited for being theoretically understood would be ill suited for us. In parallel fashion, I suggest that a world that did not give occasion for practically and physically robust participation would also be unsuitable for us.

There is something about the mode of appreciation Brewer advocates which makes it hard to replace “near” objects with “distant” objects, even when we are thinking about theoretical understanding. Abstract mathematics, for example, when it does not describe the domain in which we live and move and act, still has some intellectual value, but it cannot be a part of navigating our world knowingly.

One way to think of what follows in chapter six is as an exploration of how craft provides a valuable mode of knowing that we as human knowers need. This mode depends on having richly knowable things as part of our environment. Part of what I hope to show is that the kind of participating-with associated with craft is such a mode of human knowing, and that it is one that we would be the poorer for if our world did not provide.

My defense of the value of craft in terms of knowing the world around me may seem dangerously circular. Craft is good because it allows me to participate with and thereby know my environment; knowing my environment is good because it provides opportunity for the kind of participating-with that craft enables. Certainly, the question of what kind of knowing and what mode of knowing we need to flourish as knowers is closely tied to the question of what knowables are intellectually important to know. Both questions must ultimately be answered in a way that respects what it is to be a finite human knower and agent.

5.11 Conclusion

I could say that this chapter concludes the *preparatory part* of the dissertation, or, I could say that this chapter forms the *heart* of the dissertation. The reason to class it as preparatory is that this and previous chapters do not systematically explore the goods of knowing to be found in skilled physical work of scope. Examples have, often enough, been drawn from the craft contexts, but the focus so far has been on adequately characterizing more general notions regarding the nature and value of knowing. Yet, there is also reason to

categorize this chapter as the heart of the dissertation. For, the key to my characterization of the intellectual value of skilled physical work of scope is the notion of knowing via participatory activities explored in this chapter.

Knowing by participating-with is what allows us to make good sense of the way that activities that are decidedly physical and practical, as are craft activities, figure in knowing. Participating-with is pervasive across a wide range of knowing situations, but both physicality and practicality are ways in which participation becomes more robust. Physical activities with the known supply a mode of engagement between the knower and the known which enriches knowledge. This is both because many things worth knowing are physical in character and more importantly because we are physical in character (though not exclusively physical). As embodied knowers, physical activities give us a fuller and more thorough knowledge (which, of course, is not to deny the need for a more abstract and contemplative grasp of reality). Similarly, practical activities, those done in order to meet our needs and wants, supply a mode of engagement between the knower and the known which enriches knowledge. In the case of knowing persons, this reflects the fact that the known is also an agent with practical concerns of meeting needs and wants. But, more generally, we benefit from practical participating-with because it is fundamental to who we are that we engage in goal-directed activities in order to make lives for ourselves. Our lives must be made in our natural, social, and built environments.

6 Knowing the World by Working

In this dissertation, I have set out to explore and defend the significance of craft as knowing. What have I accomplished so far? What more do I hope to accomplish in this final chapter? Roughly speaking, what I take myself to have accomplished is *rebutting* general objections against thinking of craft as significant knowing and *providing* general reasons to think the kind of knowing involved in craft might be intellectually significant. What this chapter adds is a more specific exploration of the intellectual goods of craft. These goods include realities known in craft as well as virtues developed in craft knowers. In prior chapters, I have rejected various arguments and ways of thinking that demean craft, and I have explored various advantages that craft has for knowing. In particular, I have emphasized the benefits of robustly physical and practical participation with our particular environment—the world in which we live and move and exist. The present chapter looks more specifically at craft and the knowledge involved in (certain examples of) it. This allows a more specific exploration of craft as valuable knowing.

This more specific task calls for some acquaintance with craft. Here we come to a question of methodology. How can such acquaintance with craft be gained? This question can be asked as the general question of what routes might yield adequate knowledge, or it can be asked as the particular question of what I can do in this final chapter of this dissertation to make some contribution to such an acquaintance with craft. I begin with the general question of how the necessary acquaintance with craft can be gained and work my way toward an outline of what I hope to achieve in this chapter.

We can acquaint ourselves with craft at various degrees of distance. The most direct way is via working as a craftsperson. At a little more distance, we can acquaint ourselves with craft by spending large amounts of time with craftspeople in the relevant contexts. This sort of observation will be more enlightening if the observer is with a community of craftspeople and observes their interaction with each other. At further remove from the actual practice of craft, we can gain some acquaintance with craft via interpreters of craft. Someone who has

knowledge of craft can convey something of that to others via written or spoken articulation of craft. On the one hand, reading another's description of craft seems an indirect and limited way of knowing craft—and certainly we hope the interpreter has done more than read others' descriptions of craft. But we also benefit from the work of the interpreters. They can direct our attention to aspects of what goes on in craft that we might miss if we only observed craftspersons and even to aspects we might miss in reflecting on our own experience in craft. After all, appreciating the value of craft means not only thinking craft thoughts but thinking thoughts about craft thoughts. Less clunkily put, to appreciate the intellectual value of craft we need to reflect on the kind of thinking that goes on in craft.

I note here the work and strategies of two craft interpreters. In *The Mind at Work*, Mike Rose explores the kinds of thinking involved in various jobs from waitressing to welding and from hair care to automotive finishing.¹⁵⁷ Rose does not discuss these jobs from a standpoint of personal participation in the craft. With regard to waitressing, he does draw on his observation of his mother, who worked as a waitress throughout his childhood, and with regard to the automotive industry he draws heavily on the experience of an uncle with whom he was close. But, for the other jobs, he leans heavily on his observation of and conversations with teachers and students in high school or postsecondary vocational training programs. His childhood experience gives this academic some anchor in the world of craft, and of blue collar work more generally. His time spent in vocational training programs gives him close observation and the benefits of that uniquely positioned interpreter, the teacher. It also dovetails with his interest in the successes, failures, and potential of high school vocational classes. Another craft interpreter, on whom I draw more heavily, is Matthew Crawford. In *Shop Class as Soul Craft*, Crawford aims both to increase our appreciation and respect for craft *and* to argue that craft (of a certain sort) may well be the wisest career choice for a substantial number of people. Crawford draws heavily on his experience as a mechanic and motor enthusiast, and to a lesser extent his knowledge of building trains gained in good part

¹⁵⁷ Mike Rose, *The Mind at Work: Valuing the Intelligence of the American Worker* (New York: Viking Penguin, 2004).

through his work as an electrician. Crawford synthesizes this experience with his knowledge of the history of (mainly American) technology, economics, and philosophy.

Obviously, I cannot replicate the work of these authors in this chapter. My way of facilitating an appreciation and respect for the lives of craftspersons as intellectually valuable will not be the same as theirs. What I can do is speak from my own craft work and my experience within a community and culture pervaded by craft and skeptical of the human value of both the office and the factory. I grew up in light construction, and that filled the gaps between academic periods until graduate school and to a lesser extent through graduate school. Construction experience permeates the community to the extent that church work days to assist with construction or remodeling are not uncommon and the idea of hiring a contractor to build or add on to a church house does not even occur for discussion.¹⁵⁸ I grew up with lesser exposure to other forms of craft including agriculture and mechanics. I continue to have a strong inclination to do things myself, often at a significant cost of time and sometimes of the resultant quality as well, and this inclination can only be partly explained on economic grounds. The most prominent do-it-myself projects of recent years have involved attempting to diagnose my vehicles and plenty of changing parts—though I let a shop replace the transmission on my car.

Thus, my contribution to an appreciation of the knowing-related good of craft draws from multiple sources. One is my limited but real experience with making things of wood and repairing autos. Another is my life among craftspersons. And the interpretive work of others, especially Crawford, plays a big part. I use these sources in ways shaped by my philosophy of knowing and philosophy of work. What I do, then, is not just telling stories with the hope that the reader will see what I see. Rather, I draw attention to ways in which the characteristics of craft help us know.

I explore in this chapter the possibilities of craft for knowing the natural world, the built world, and the personal and interpersonal worlds. With regard to the natural world, craft may involve participating with animals and plants: keeping chickens safe from dogs or lettuce

¹⁵⁸ Though certain parts of the job will be subbed out.

safe from chickens etc. And it may involve rocks and minerals, hills and valleys, chemistry and physics, etc. With regard to the built world, craft knowledge may concern specific entities or sorts of entities, as in a particular building or a model of car or tractor; or it may concern the built world more generally, as in common types of fasteners or the conventions of light construction. Craft knowledge of the natural world often comes thoroughly intertwined with knowledge of the built world. We work the natural world with built tools. Most often we experience the properties of wood or clay by building something with them or by using something built to interact with them.

While craft is largely directed at the natural and built worlds, it also involves knowing oneself and knowing other persons. Much of the self-knowledge is subsidiary rather than focal, the self-knowledge involved in skills, bodily or otherwise. Craft also yields self-knowledge regarding the extent of one's own efficacy and regarding one's responses to frustration. The most obvious way we know other people through craft is as fellow-workers. Beyond that, craft work involves knowledge of other persons by virtue of working with and in a world that is socially built and by working in the context of trade and partnership—very little of our work is strictly done for our own direct satisfaction apart from cooperation with others.

As far as intellectual excellences required for or developed in craft knowers, I explore attentiveness and creativity. Crawford highlights attentiveness as the distinctive virtue of the one who must maintain and fix what already exists. The attentive person must submit his action and attention to what already exists rather than imposing his own plan on that reality. But creativity, of course, also requires knowing and submitting to existing reality, and so I explore the constraints and opportunities that craft brings for creativity.

The chapter proceeds as follows: Section one elaborates my (stipulative but not unnatural) definition of craft as skilled physical work of scope. This fourfold definition allows more specific ways of describing the positive aspects of craft knowledge. It also allows a more principled explanation of the features of craft shared with other activities. Section two briefly reviews the difficulties for thinking of craft as significant knowing and summarizes my

responses that have emerged over the preceding chapters. The remaining sections of the chapter turn to more specific intellectual goods of craft. Sections three, four, and five, explore the knowing which craft affords regarding the natural world, the built world, and the social world respectively. These sections concern both the *content*—what can be known in craft, and the *mode*—how these things can be known in craft. Section six concerns attentiveness and creativity. Attentiveness is understood as submitting one’s work and effort to the nature of the natural or manmade object one needs to work with. This submission and attentiveness both enables and structures creativity. The conclusion of this chapter returns to the larger epistemological themes of the dissertation. It thus serves as a conclusion to the dissertation as a whole. I note how my characterization of knowing allows us to see the goods of craft as knowing in a way that many approaches to epistemology do not.

6.1 Craft as skilled physical work of sufficient scope

I use ‘craft’ here to refer to skilled physical work of scope. This is a stipulative definition for the term craft, but not an unnatural one. In this section I say a bit about each of the four elements of this definition. Craft is work, craft is physical, craft is skilled, and craft involves a sufficient scope of activity. Each feature comes in degrees. Various forms of craft and various craft lives will have different mixes of these four features. Other activities and lives exhibit some but not all of the four features I associate with craft. These variations mean that not all craft has the values I describe to the same extent and that some activities other than craft share many of the values I describe. This is as it should be. The central cases which I mainly have in mind involve skill, work, physicality, and scope to a fair degree, but they bear various resemblances and share various values with other activities and life forms. Of course, these are not the only dimensions along which activities may vary in value. Another obvious dimension of variation concerns what aspects of reality one is able to participate with in various activities. Not all work is created equal. Some work offers richer potential for knowing important parts of our world than does other work, and different work lives have

different potentials.¹⁵⁹ That will be addressed somewhat through the various craft examples given over the course of the chapter.

6.1.1 Craft is work

As one author puts it, work has “a certain object in mind.... It always involves effort against obstacles. It is effort motivated by necessities for ourselves or others. In contrast, play is effort or activity for the purpose of entertainment, recreation, amusement, learning, diversion, or simply for exercise.”¹⁶⁰ We do not usually regard the last step of satisfying our wants or needs as work. Picking berries for later consumption we call work, but not placing the berry in one’s mouth. Making a ball bat is called work, but not batting a ball, unless it is done for pay. But an activity done primarily for someone else often becomes work: coaching softball, for example, or playing softball as a babysitting activity. Work is characteristically for the sake of some result distinct from the activity. And this result is used more or less directly for a human want or need. The making of a bat is for the sake of the bat which will be used to play, and the bathing of the baby is for the sake of the cleanness of the baby which is oriented toward comfort and health. Making the pie is for the sake of the pie which will be eaten. With recreational activities, by contrast, there may well be a pressure to do that activity well, which requires participating with the world intelligently, but there is not the pressure to produce an end product that satisfies further wants, needs, or other interests.

Work is in service of wealth, with the term “wealth” broadly construed to include those things humans want or need and those things that supply human wants or needs in fairly direct fashion.¹⁶¹ Our labor may not seek great wealth, but it seeks to make the world the way someone wants it or needs it and to enable other human activities. Work is the link between

¹⁵⁹ Another dimension in which not all work is equal concerns its wisdom and productivity and the reasons for its aims. Work to provide necessities and wholesome wants is better than work to provide frivolous indulgence or to gratify unjust desires. Work to make up for others’, or our own, stupidity is frustrating. And nobody likes unnecessary work to recover what has been ruined because of carelessness or animosity.

¹⁶⁰ Lloyd A. Kniss, *Practical Pointers for Training Your Child*, 2nd ed. (Harrisonburg, VA: Christian Light Publications, 2004), 147.

¹⁶¹ Note that wealth is here defined very broadly. We would seldom refer to a baby’s or an elderly person’s cleanness or dryness as wealth. But changing diapers and bathing others is certainly work—work too seldom honored. And going from urine-soaked clothing to dry clothing is a change in the world that aligns the world with human wants and needs.

what is supplied in nature and what meets our wants and needs. That link can be short, as when I pick a wild berry, and then eat it. Or it can be long and multi-stranded, as when I eat a pie made from cultivated hybrid berries. Someone cleared a field using chainsaws and tractors, which tools themselves have a complex process of work behind them. Someone had to prepare the soil and plant a hybrid berry, which has its own long history of work. And someone had to tend and pick and pack the berries. These were then shipped on trucks over roads and moved through complex market channels to a local grocery store. Someone then worked them together with other ingredients with similar histories to make the berry pie I eat. As with the pie, so with wealth in general, wealth derives from a combination of *what already exists* and intelligent human effort. Ultimately, wealth derives from our work on and with nature, but more proximately wealth often derives from work on or with some built object. The bicycle ultimately traces to work on iron ore, petroleum, etc. but more proximately it traces to intelligent work on steel and plastic or intelligent work on tubing and bolts. Most immediately, a rideable bicycle derives from intelligent work on a bicycle, such as inflating tires, adjusting seats, handle bars, or brakes, replacing parts, and other forms of maintenance.

The work aspect of craft means that we participate with reality in ways that are practically robust (where “practical” is used in the colloquial sense of pertaining to meeting our needs and wants.) All work, whether craft or not, enables practically robust participation. Craft is distinguished from other work by being skilled, physical, and of sufficient scope. These characteristics bring in additional valuable features of craft knowing.

6.1.2 Craft is physical

I mean the term “physical work” in the colloquial sense. Of course, all work is physical in some sense. After all, we are embodied beings whose brains play a role in our thinking that is very significant, to say the least. And it can be difficult to draw a sharp line between work that is physical and work that is not. We can get at part of the difference by noting that some results are physical, and others are not. Getting the new water pump bolted on my Altima—which is a pressing need as I write this paragraph—is a physical and tangible result. Getting the overall structure of this chapter mapped out—also a pressing need as I

write this paragraph—is not a physical result in the same sense. Figuring out the chapter structure will involve lots of physical processes besides those in my brain—marks on paper, sketches on whiteboards, pressing computer keys, visibly rearranging pixels on my screen by mouse clicks mediated through software, etc. However, the chapter structure itself is not physical; it can be represented in many different physical ways, whether on a computer screen, printed on paper, carved into granite, or written on a whiteboard. Physical work aims at the physical results in a direct way. Programming a computerized saw is aimed at getting the outputs from the saw that are physically correct, for example. But the direct task of programming is not physical, even though it aims at the physical result of properly cut boards.

The physical character of craft means that we participate with reality in ways that are physically robust. Unlike some participatory activities, such as proving math theorems, craft directly engages the body with the physical world. Certain kinds of physical work also physically engage us with non-physical realities. Abstract or immaterial realities can be concretely encountered in our work.

6.1.3 Craft is skilled

Not all physical work is skilled to a significant degree; some is very simple and repetitive and requires little skill. Any willing worker can be hired for a day to carry some boxes from point A to point B. Work advertised under the heading “laborer” might be minimally skilled physical work. Doing these jobs well does not require much by way of practice or instruction; the learning curve is not particularly steep or long. Skill is, of course, a matter of degree; it is seldom lacking entirely. And even seemingly brute jobs must be learned in order to do them efficiently without hurting oneself. Even with a task like shoveling gravel, it helps to know how to do it. The skills of craft are not all as robustly physical as shoveling gravel though. Some are more mathematical in character, as in creating the initial pattern for stair stringers.

Previous chapters have offered various reasons to think of skills as knowledge. These came through in my discussion of Ryle on knowing how, and in my discussion of Polanyi and Meek. Skill involves self-knowledge and it involves knowing the world through one’s agency.

Skill is not limited to work, nor is skilled work limited to craft. Sports are skilled physical activity. Computer programming is skilled work, but not physical. As with the other elements in my definition of craft, skill is found in various other contexts as well.

6.1.4 Craft is of sufficient scope

Skilled physical work can be narrow in a way that diminishes its value as knowledge. As an extreme case, imagine a work life that consists in installing one part into an assembly where the installer does not even know what machine the finished assembly figures in. The operation requires skill and dexterity and requires a long time to learn, but that is the only operation one does (within that line of work) and one has no context for it. Forms of work that involve varied skilled physical operations and involve a greater context for those operations are the richer because of it. The scope element to my definition of craft acknowledges that there is indeed such a thing as problematic narrowness in one's pursuits. Work that is too narrow is less valuable as knowing than work that is broader in scope. But craft lives are often quite wide in scope. The two examples in the next section are designed to, among other things, illustrate the richness of scope that can come in craft.

6.1.5 Examples of craft and relatives of craft

I sketch here two hypothetical examples of particularly full or robust craft lives. These are intended as pictures of people who have craft knowledge to a high degree. They are not typical cases in a statistical sense. Nor is my account of the intellectual goods of craft limited to cases as robust and full as these. What they are intended to do is give a picture of the possible scope and extent of craft with regard to the range of skills and range of the natural and built worlds that can be known. Both cases involve responsibility for managing resources and making systems work. They are not examples of the kind of brute labor exemplified by burden bearers and water haulers or, in more modern times, by assembly line workers. Rather they involve comprehensive responsibility for some part of the world.

Our first (hypothetical) character is a farmer whom we shall call Dan. Dan owns two hundred acres. Fifty are wooded. Fifty are pasture. And the rest are tilled. Dan milks cattle

and his monetary income derives almost entirely from the sale of milk. He raises his own feed, except for small quantities of supplements. This means managing pasture forage, hay, corn for silage and grain, oats, soybeans, and a few other crops. Dan is far enough north that his cattle must be housed in a barn from late November until late February. Dan draws no rigid line between business and personal endeavors. The same driveway serves house and barn. The same tractors push snow for both, work food plots for Dan's family and corn fields for his cows, and pull loads of firewood to heat house and shop. The knowledge demands of such a life are extensive and intense. Such a farmer must knowledgeably work with a great variety of plants and animals in the context of an ecosystem and within an ever-changing weather situation. The demands in terms of the built worlds of barns, tractors, and implements as well as the demands of the conventional world of trade, markets, and regulations are scarcely less intense than the demands of the natural world.

Our second (hypothetical) character is Lucy the plumber. Her monetary income derives almost exclusively from contracted plumbing jobs, usually as a subcontractor. Her main concerns are water supplies for houses and water exits—drain and vent systems. But she also runs gas lines and installs various appliances. She has to work with a variety of materials depending on customer preferences and local codes, as well as differing applications. These include copper, iron, pvc, and pex. In addition to business pursuits that bring in monetary income, Lucy manages a house and garden. Her situation naturally leads to a sharper distinction between business and household than in Dan's case. Work for monetary income and work for more direct provision for her and others' needs take place in largely different spheres. Her main line of work is more specialized than Dan's and involves a narrower scope, but the scope, even on the business side of things, is still impressive.

Now for some caveats. First, craft knowledge, even in a robust and varied craft life like that of farmer Dan, is not enough for a life that is intellectually good *overall*. There are elements of a good intellectual life that are not craft knowledge. I have made no attempt to theorize what is required for an intellectual life that is good overall, whether this is taken as a question of being *adequately good* or of being *optimally good*. But I would note a few objects

of knowledge that should be known in ways that go beyond what is likely to happen in craft. One should know God. One should know other people in more extensive ways than craft alone provides. One should know something of their people's art, stories, and philosophy. One's knowledge of nature and science should go beyond the strict requirements of craft. Additional mathematical knowledge is helpful as well.

The other caveats involve the place of craft in the spectrum of work. Craft knowledge is seldom as comprehensive as in the examples I have cited. Not all instances of craft involve all the features highlighted in this chapter. Also, as I have emphasized, other forms of work share some of the values of skilled physical work of scope. Skilled physical jobs that are narrow still let us know *some* (narrow) thing well and develop some physical skill. Physical work that is minimally skilled can still expose us to a lot of the world depending on its context (think here of the difference between shuttling blank boxes day after day in a factory and working for a custom mover). When it comes to minimally physical jobs like accounting, scheduling, and a host of others, we are still working in a built environment, or something analogous to it. Computer systems and software systems are built. In an extended sense, monetary systems, tax codes, and other concerns of accountants are also built. They are the result of more or less intelligent human setting up, and so in them, like in mechanics or construction, we come to know a part of the built human world. Further, all of these forms of work that overlap with craft also involve knowing people through trade and partnership.

6.2 Craft worries reviewed and my responses summarized

The starting point for the dissertation is the question of the value of craft as knowing. In chapter one, I identified common barriers to appreciating this value and have argued at length that a proper understanding of knowledge avoids or greatly reduces these barriers. The first barrier is the tendency to reduce the concepts of knowing and of what counts as intellectual to knowing or believing *descriptions* of things, that is to knowing or considering *propositions* that assert something *about* the thing in question. Work usually focuses on doing things and exercising skills rather than working with propositions. In response I argued that most centrally what we know is objects or aspects of reality and that not all ways of being in

cognitive contact with reality involve affirming propositions. I discussed examples of non-propositional knowing from the work of various philosophers. These included contemporary theories of understanding, Ryle's account of knowing how, and Aristotle's notion of truthing. These all point to ways of knowing—being in cognitive contact with the known—that are not limited to the model of describing or making claims about the known. They also point to deficiencies of accounts of knowing that limit themselves to knowing such propositions about reality. So, in chapter five I articulated the widespread importance and distinctive intellectual benefits of participatory activities. The notion of knowing by participating-with forms the theoretical justification for the approach I take in this chapter to the more specific goods of craft.

The second barrier I identified is an inadequate conception of the structure of ends. One side of this is a misunderstanding of the significance of usefulness or productivity. This manifests as the idea that genuinely valuable activities, or at least genuinely valuable intellectual activities, are done for their own sake and not, for example, in order to feed oneself or to get feces out of sight. Craft involves an end structure that appears paradoxical: Craft has significant value that does not simply derive from the products of craft, *even though* craft activities are generally not choice-worthy unless they contribute toward some (independently) valuable end. As a first response to this family of worries, I cite similar end-structures from other philosophers. Aristotle says that the virtuous action is done for its own sake, but, as David Pears helps us see, virtuous action often consists in responding well to other ends that are indeed choice-worthy. Plato describes a category of goods in the *Republic* that comes even closer to the end structure I identify in craft. Some goods, he says, are valued both for themselves and for what comes from them; examples include health, sight, and knowledge. Craft, I argue, is a form of knowledge. But my fullest response to the end-structure questions came in chapter five with the discussion of participatory activities. Much of our knowing, of people and of other things, comes through participating with reality in some activity. Typically, the direct aim for which such activities are chosen is something

other than knowledge, but this does not negate the value of the participatory knowledge from the activity.

There is another sort of objection connected to the structure of ends. This is the idea that the objects of craft and the way in which craft approaches its objects are not intellectually important. High grade knowledge should concern, it is often thought, the greatest things and when it deals with lesser things it should have a broad view of them and grasp the universal features that run through the particulars. Physical work seems to deal with trivial objects and to concern itself with them only under the narrow lens of accomplishing some task. I give several responses to this family of worries. One is a concession: these worries do get at the fact that craft knowledge is *not sufficient* for a life that is intellectually good overall. I made brief comments about the insufficiency of craft above. But the narrowness of craft also provides intellectual benefits. For broad and universal knowledge to be what it should be—to be comprehensive and deep rather than superficial and scattered—one must have more particular knowledge of some narrower part of reality. We must also remember that it is valuable to live our lives knowingly by intelligently and appreciatively navigating our particular environment. The notion of knowing our world and the notion of knowing through participatory activities mesh together. What we can participate with, particularly what we can participate with in physically and practically robust ways, is our environment, the portion of reality in which we live and move and exist. So, if participatory knowledge is important, so is our particular environment. On the other hand, knowing our environment thoroughly must mean knowing our practical and physical contexts, and physical and practical participatory activities are central to knowing these contexts. So, if knowing our environment is intellectually important, so is craft.

6.3 Knowing the natural world

Ultimately, work produces wealth by participating with the natural world. Craft allows us to know large sections of our natural environment. Usually our work with nature involves heavy layers of conventional and built reality; our participatory activities are seldom with nature alone. Thus, craft knowledge of nature is enmeshed in and often mediated through our

knowing of the built world. In one sense, craft is dominated by the built world. Work is with tools, it is often aimed at making or maintaining artifacts, and it is always within a framework of human concerns and conventions. But the built world is rooted in things not built (the natural world) and is also inherently social, both in its production and its purpose. It is then a bit artificial to separate the craft knowledge of the natural world, the built world, and the social world, but this division helps with exposition, and it helps to emphasize the role of working with the built world in our knowledge of the natural and social worlds. I begin, however, by exploring the sorts of non-built and non-conventional aspects of reality with which a craftsperson might work.

Under the heading of the ‘natural world’ I include not only the concerns of an outdoorsman or “naturalist,” but all aspects of the non-artificial and non-social world including the properties of materials, and even mathematics insofar as its structure is part of non-artificial and non-social reality. Craft activities are not focused on knowing these aspects of reality in the way that natural science is. Scientific activities have as their overarching focal point understanding the relevant part of nature and making it intelligible to ourselves and others. Both science and craft involve knowing the natural world by participating with it. The differences come in what the activities are most directly aimed at and the resulting difference in methods. In this respect there is a continuum between craft and science with the middle of the continuum occupied by those forms of research that are more or less directly tied to figuring out how to produce practical effects.

Some of the most basic needs which craft aims to fill are those of food, shelter, and clothing. In a society as far flung and as extremely trade dependent as ours, transportation also becomes a need of almost as much urgency. Historically, many craft people produced clothing by working directly with the natural world. However, in American society at least, craftspersons working with clothing are unlikely to work directly with natural objects. I know plenty of people who make or mend clothing as part of their work, but they do not produce their own thread or work with home-tanned hides. The situation with transportation is similar. In the next section I discuss auto repair as a way of knowing the built world. But my

mechanical experience exposes me to the natural world only in that I work with physical materials that are usually highly processed and in that I must deal with the patterns of physics and geometry. Meeting the need for shelter is usually much more closely connected to the natural world. I discuss the construction of buildings as a transition from this section on knowing the natural world to the next section, which concerns knowing the built world. Of the four needs I listed, the need for food brings workers into the most direct contact with nature.

Obtaining food from plants and (in almost all societies) animals is perhaps the most basic craft. This either involves finding and taking the right thing at the right time (as in hunter-gatherer societies), or it involves creating the conditions for plants and animals under human control to grow well (as in farming societies.) Hunting of the sort that can seriously contribute to sustaining a population requires attention to the movement and habits of the prey. A hunter must be at the right place at the right time without moving the animal away. One must think like the animal. Gathering has less of the interactive character of hunting, but it would need to involve a lot of sensitivity to what kinds of things grow where and when. Agriculture marks the shift from finding to nurturing. The question is no longer where to find digestible plant parts, but how (and where) to create the conditions for the right plants and animals to flourish. Some tending is straightforward; suppress other plant growth around vegetables; keep animals fed and watered. But it doesn't take much experience to find out the hard way that things are not that simple.

Having to maintain the conditions that allow plants and animals to flourish (at least in the ways relevant to one's own sustenance) forces attention to their needs. The farmer must put his knowledge to the test in the way that an observer need not. His participating-with either goes well or it does not. While my own limited activity with plants and animals has been work and not simply hobby, its practical aspect, and thereby the pressure of it, has been limited by the fact that my garden and chickens are economically marginal. Diseased tomato plants dying and chickens being taken by dogs or coyotes are set-backs, but they do not significantly impact the family's eating habits, lodging, clothing, or transportation. Those mishaps do reveal our limited knowledge and abilities, but they do not do it as vividly as they

would if the practical urgency were higher. At a minimum, robustly practical participatory activities put knowledge to a more intense test, but I suspect that participating in this way adds a dimension to the knowing itself.

Agriculture is one of the practical pursuits that forces us to know geographical features in a practical way. Farming brings into play considerations of soils, water flow, shade, and hills and valleys. Building, in its various forms, engages similar realities but in different aspects. The farmer is concerned with fertility in soil, the builder with stability, for example. Perhaps the most comprehensive craft knowledge of local geography would come with someone like Dan our hypothetical farmer. Someone intent on making a farmstead life must attend to water for crops, for animals and for himself. He must think about what makes a good site for a structure, a path, or a road. His success depends on figuring out how the land can support a profitable assortment of plants and animals, and how he can adjust his operations to its constraints.

Shifting from the excavation and siting aspects of construction to building structures and equipment brings one into participation with the materials of construction. Rocks and trees are worked with as materials for shaping structures rather than as features of the landscape. For use in building houses, barns, furniture, tools, etc. such natural things as trees and rocks are cut, hewn, and otherwise fashioned. Construction brings into focus properties of strength such as hardness, resistance to shattering and deflection, as well as properties of workability such as ease of cutting and receiving fasteners. These are still properties of the natural world—of things that are not built or social—but they move us toward working with natural things in terms of something analogous to physics rather than to biology or geology. Often the materials of building take more preparation than simply shaping. Metals, for example, need to be refined before they can be shaped. This puts metals on the edge of the natural world/built world divide. In fact, the methods of knowing natural building materials like wood and stone are essentially the same as those by which we know built materials such as plastics or composites. This is one reason that knowing the built world is important for knowing the natural world. Building things is a particularly good way of participating with

certain aspects of natural materials like wood and rocks. Building is also a particularly good way of knowing the aspects of the natural world that resemble the study of physics or geometry.

More generally, the participation with the natural world that craft affords is almost always entwined with, if not mediated by, the built world. For very few is hunting, gathering, or herding a significant part of work life. Even diversified farmers like Dan are few and far between. Craft is often much narrower and involves specific parts of the built world. One may be a mechanic, a builder, or an excavator. Knowledge of nature comes through a certain level of abstraction as compared to the knowledge of the hunter or gatherer. Even when plants or soil are encountered it may be through the mediation of tools. One can “feel” the dirt with a shovel or backhoe as well as with one’s fingers. While there is a loss associated with these built-world ways of participating with nature, there are also gains. The built world, to which I turn next, is a worthwhile object of knowledge.

6.4 Knowing the built world

The world in which we live and move and exist is a built world to a degree it can be hard to appreciate. This built character is most obvious in densely developed urban areas. In some areas few patches of the original soil and terrain remain, with creeks replaced by storm sewers. Here the built-ness of one’s environment is painfully obvious (at least it is painful to many who have lived elsewhere); One walks on sidewalks, water flows in sewers, trees grow in boxes, and hills are experienced as sets of stairs, if not elevators. But even in rural life, which is in many ways more natural, the built-ness of the world comes through. A guide to wild plants will point out some that are often found on roadsides, or in fencerows, or in disturbed soil, or in old fields. These are fundamental features of a rural landscape and represent present and past human building.

This pervasive built-ness does not only enable our daily movements and routines, it also structures the way we see the earth and gives us our categories. Fields, lawns, roads, houses, parks, and commercial buildings are functional categorizations that shape how we see spaces and what we will attempt to do with them. We live, not so much in nature directly, as

in settlements, and for most of us, our entire surroundings have become settlement. If we are going to know our environment, it is going to involve knowing the world we collectively have built. This means knowing the material basis of this world. This material basis includes nature, as discussed in the previous section. But it also includes the techniques, technologies, and conventional materials of building. This includes among other things a bevy of broadly mechanical concepts from doors to screws, from hinges to levers, and from pipes to flashing. The material basis of our existence includes specifics like the various heads on screws and bolts, the direction of threads on all things screwable, and the varieties of concrete.

The conventionality of our material world is reflected in the conventionality of craft. No craft involves us with all the material basis of our lives—we are, after all, limited and interdependent creatures—but many conventions and principles are pervasive across wide swathes of the built world. Knowledge of one, especially thorough knowledge, gives some level of understanding of many others. To give but one obvious example: screwing is pervasive and in our society everything from bottle caps to lags are threaded in the same direction—unless a reverse thread is needed to keep a rotating part from loosening the bolt. Part of the conventionality of work comes from standard tools and technologies.

Knowing a tool or technology opens a new world. This new world is practical; it is the ability to do new things and a new set of categories for what can be done and how it can be done, and it is a new realm of knowledge. In my own case, using a soldering iron and using a welder are two of the more proximate worlds that I am (for now) shut out of. Those tools stand for the realm of metalworking and electronics that I have very limited access to participating with. I hear (or read) some of the vocabulary of these technologies, but I cannot use that vocabulary to work the world and only a little of it to describe the world or see the world. Coming to know new tools would let me see some situations much better. I think in terms of wood construction, where things can be cut, glued, nailed, and screwed. Even my metal tasks are largely in that mold, thinking what I can screw or bolt together. New tools, and the technologies they go with, would let me see metal as something to be welded, bent, and tapped, which would allow a world of new possibilities for acting and understanding.

These new possibilities are not limited to using new tools and new components. New technologies bring new concepts and ways of seeing that shape how we improvise when the tools or components are not available. Three weeks spent with my grandpa in his one-man cabinet shop has affected many little projects which I have done since with simpler tools and cruder versions of the same techniques. Doubtless more time in the cabinet shop would have improved my ability to see the world through these ways of work.

Craft, like tools, is a particularly interesting object of knowledge in light of Polanyi's epistemology. We know tools both subsidiarily and focally. As a focal object of knowledge, tools are themselves parts of the built human world. As things subsidiarily known tools may help one to know other parts of the built human world, perhaps a bolt that rounded too easily. Tools may also help one know some part of the natural world, perhaps the dense clay that bogs down a plow. Just as tools can be known focally but are generally known subsidiarily while focusing on something else, so also with craft knowledge as a whole. We focus on craft knowledge when we need to figure out how to do something or when we find a particular technology or skill striking, but most of the time we see the world through craft knowledge, whether this is specific and deep knowledge or whether it is general background knowledge.

6.5 Knowing the social world and knowing oneself

Craft and knowing persons go together. In chapter five I argued that knowing other people serves as a paradigm for the knowing that goes on in craft, since the literal "interaction" we have with persons serves as the fullest paradigm of participating with the known. Here I am not so much concerned with the parallels between knowing via human relationships and knowing via craft as I am concerned with the way craft often involves knowing people. Craft involves participation with other people in various ways. Working with someone on a common project is the most direct and obvious way of participating with them through craft. Sometimes this is simply doing the same sorts of tasks independently side by side. Other times it involves "co-operation" in the literal sense: setting joists in place takes someone on each end, setting trusses takes several people working together. Such tasks involve bodily cooperation and inter-reliance. Another way we participate with others in craft comes from

the built world character of craft. We work on and with the products of other people's work and intelligence. Another important but complicated way we know others through craft is that craft is usually in the context of trade or partnership and so concerns what other people take themselves to need or want. Finally, this section reflects briefly on the value of craft for knowing that person who is myself.

First, let me briefly recap how the end of knowing persons may relate to other ends of an activity. Sometimes interaction is directly aimed at knowing the other person, as with a date where the activity is a means to being with someone. Some activities have a dual focus such as wanting to go on a hike with a group. Other activities push the being together into the background and focus on what is done together. Work is usually in this latter class. The focus is on getting a house built, or a car fixed, not on spending time with the other workers. On most jobs, we would not be together with the particular people we in fact are, were it not for the need to get the job done. We only spend this time together when it is useful for some other end. This should have a familiar ring to it by now. In general, we only pursue work and the skills and knowing it involves when there is some external end to be gained by it. Interacting with persons in this context is here subordinate to meeting other human wants and needs, just as is the skill of diagnosing an engine or driving nails in difficult spots. But as I have argued at length, non-focal does not mean non-valuable. Something that is pursued only when it contributes to a further end may well enough have a value well beyond its contribution to that end. Much work is valuable for the knowing of persons it involves.

Work provides co-participation in a skill, often a bodily skill. Carrying something together or sliding it in place together require knowing the other and working together. Bodily co-skilled activity occurs in other contexts than work, of course. One thinks of various recreational and sport activities. Like these, skilled physical work often requires the coordination of bodily movement in ways responsive to another. What work offers that recreation usually does not is cooperation in conditions of necessity when the goal is not recreation but something useful and needful. It is working together in the prosaic rather than

playing together in the exciting. This “boring” or “instrumental” character of the activity shows up aspects of the other’s character that may not be apparent in other situations.

Working together is not only *bodily* cooperation. It often requires discussion with fellow workers. Thus, we know each other in terms of habits of thought and reflective speech as well as through the body knowledge of shared physical work. Both the shared physical tasks and the reflective discussion are aspects of the larger “co-operation” of craft. Co-workers work together for a goal with parts of the natural and built world that they have some mutual interest in understanding and using.

Working with the built world means our work depends on learning to deal with other people’s ways. We never make things *ex nihilo*, and we scarcely ever make completely from scratch. Even if I have felled the tree and sawn the boards myself, I will still use screws or nails, at least, that are artifacts of another’s work. Even if I should build a chair fastened solely with wooden pegs I carved myself, I will have used tools that I did not make, at least not from scratch and using only the products of nature. Our making and creativity depends on knowing how to work with a built environment. Both maintenance and making require us to work with the built world with its conventions, some reasonable and some not. We have to deal with how other people make things. If we do not follow their logic when fixing things, we will frustrate ourselves. The right tools and the right order, and above all the right parts make all the difference in mechanics. We are dealing with other people’s making.

It is an important feature of much of our work that it answers to someone else. One group of people we answer to is fellow and future workers. These might be workers who will work on the same thing we are working on or workers who use our products. One should not, for example, weld parts that may need to be disassembled again. Nor should we build things in ways that needlessly keep people from working with them in standard ways.

Manufacturers are not always as considerate as they should be to future workers. My Quest mini-van is a good example. A severe misfire developed rather suddenly. Thanks to standardization my \$15 code reader revealed cylinder six as the location. Eventually I confirmed the culprit. It was a bad coil pack on that cylinder that no longer supplied spark to

that sparkplug as it should. On a more serviceable vehicle that diagnosis could have been almost instantaneous. Clear the code. Swap the cylinder six coil pack with one from another cylinder. Drive it the short time required to set the misfire code. Check the code and see that the misfire moved. That would have been the story even for this vehicle if the bad pack had been on the front bank of the V6. But the coils and plugs on the rear bank are buried under the cast metal air plenum bolted to the intake manifold. And this plenum is very closely under the tray that holds the windshield wiper motors among other things. This assembly had to be removed to access the plenum (it also has to be removed to change the front struts!) To access this coil required major disassembly before it could even be tested. Car manufacturers do not have a strong felt need to make their vehicles easily serviceable. They are not forced to answer for this in economic terms because new car buyers seldom do their own service work. Those attentive to serviceability are going to be in the used car market, if not the old car market.¹⁶² But, to end on a more positive note, vehicles are standardized enough that parts can be obtained from various sources, and even this vehicle is designed to be taken apart and reassembled with relatively standard tools. 10mm, 12mm, 14mm, 17mm, and 19mm wrenches and sockets will take out just about every bolt on the van.

Another way in which craft answers to others is through relations of exchange, and so I must say a bit, a very little bit, about this very big subject. Craft answers to what other people want and this is one way in which work often involves knowing other people. One has to do what someone is willing to pay for and thus to manifest a certain understanding—however thin—of others.

Of course, there is a dark side where people are manipulated or exploited to buy things. One can use shady advertising to manipulate people into choosing your product—and we are familiar enough with these practices, which range from annoying to despicable. Products can be designed to force purchasers to also buy non-standard accessories. Products

¹⁶² By contrast commercial construction equipment is often designed and advertised as making service, or at least routine service, easy. There service is a concern of the initial purchaser.

can also be designed with unreasonably short life cycles. Then, of course, there is plain old-fashioned fraud in all its varieties.

But fundamentally, business or wage-earning success still depends on doing what others want you to do. It is not enough that something is fun to build or easy to fix; it must answer someone's purpose. For craft purposes it is not enough even that the product be excellent, important as maintaining a standard of excellence may be. The product needs to have an excellence that someone values enough to justify the work.¹⁶³ This feature may make work seem servile and demeaning, but it is also a virtue. Work involves knowing other people. Only a few of the human needs and want sought by work are strictly our own wants or needs. Much work must be in the public and interpersonal world. Without trade of some sort, there is poverty.¹⁶⁴

Those features of my Quest that so annoyed me as a servicer found some justification in the way that Nissan answered to its customers. Minivan buyers like the power of a V6 rather than a more compact I4. This will make things tight on a van where the goal is to keep the hood short and the interior long. However, access could have been greatly improved by simply making the windshield steeper, lengthening the hood and shortening the dash without needing to move the firewall. But a long, slanted windshield was what they figured buyers would want in 2005. Style might get someone to switch from a competing manufacturer; "Easy access to sparkplugs!" would not show up in advertisements. New buyers are swayed by many things, but access to the alternator is probably not one of them.¹⁶⁵

Crawford warns us that failing to heed the interpersonal context of work, and thereby the economic context of craft, can manifest as the vice of curiosity—that is, as devotion to the

¹⁶³ Typically, this is someone willing to purchase the product. But it may be someone who will appreciate it as a gift, or it may be the producer, if he is making the product for himself.

¹⁶⁴ This truth must be balanced by the fact that our time and culture overemphasize work done for trade, especially for wages, and tends to overlook work that meets our needs more directly. People ask me whether my wife works. She stays at home and spends far more time with the children and the details of food, clothing, and shelter than do I. The proper retort would be, "Harder than you do." But even this is trade in the broad sense. We are after all, among other things, domestic partners. How the duties are divided may vary, but any sane domestic establishment relies on both work done for trade and work done to meet household wants and needs directly.

¹⁶⁵ Standard procedure to change the alternator on this vehicle involves draining the coolant and removing the radiator!

task and the machine which comes at the expense of “fiduciary responsibility to its owner.”¹⁶⁶ He makes the point with a story of a certain motorcycle in his shop. Having identified the clear primary problem, he noticed what *might* have been a contributing cause. As a mechanic, he wanted to find out if this was a problem and fix it. The only problem? This was a difficult fix, investigation was liable to make the problem worse, and even if it eventually would cause trouble, it would probably be too far down the road to matter.¹⁶⁷

Curiosity, when it is vicious rather than healthy, is limiting our attention and desire to some narrow thing we want to know, considered in isolation from its context.¹⁶⁸ So Crawford argues that curiosity is, although focused on something real and beyond the self, another form of self-absorption. It is not enough to attend to the things one is working on, as important as that mode of getting beyond one’s self and one’s projections is, but one must also attend to the people one is working for. Narcissism may come in avoiding confrontations with reality or in choosing one’s own portion of reality apart from concern for the social context. In this case, “the lust for thoroughness is at odds with the world of human concerns in which the bike is situated.”¹⁶⁹ Economics are important because the owner has other concerns besides the motorcycle and riding it, and the mechanic must remember that.

So far, I have discussed knowing *other* persons in our social world. But craft is also *self*-knowledge. This final part of this section begins a transition from the first part of the chapter, which emphasizes *what can be known* in craft, to the last part, which emphasizes what craft requires *of the knower*. I first recap a few links between knowledge of other things and self-knowledge that came up over the course of the dissertation and then speak more concretely regarding some forms of work.

Perhaps the most obvious dimension of self-knowledge through craft derives from its character as knowing how. To know how to drive a nail without bending it, for example, requires intelligence, not only with regard to the nail and the hammer, but also with regard to

¹⁶⁶ Matthew B. Crawford, *Shop Class as Soulcraft: An Inquiry Into the Value of Work* (Penguin, 2009), 120.

¹⁶⁷ Crawford, 121–24.

¹⁶⁸ Crawford, 123–24 Following Paul Griffiths; “The Vice of Curiosity,” *Pro Ecclesia* XV, no. 1 (2006): 47–63.

¹⁶⁹ Crawford, *Shop Class as Soulcraft*, 123.

one's body, especially one's arm. But subsidiary self-knowledge in craft is not limited to knowledge of one's body. The affinities between knowing other persons and knowing realities other than persons suggests a more general link between knowing (other things) and knowing oneself. It is often stressed that we know ourselves as persons in or through knowing another person. I am not here concerned with that claim directly. What I want to note is that if, as I have argued, knowing other realities through craft is analogous to knowing other persons, then craft can make similar claims promoting self-knowledge. That is, if I know myself through interacting with another person, I may also know myself subsidiarily through participating with a non-personal reality like a car or a rock.

However, like knowing myself through relationships with others, knowing myself through craft participation is not only a matter of subsidiary knowledge. Work can push aspects of myself to my reflective awareness. One way work makes self-knowledge explicit is by destroying illusions of mastery or knowledge. Physical engagement aimed at making my life work frequently shows up my abstract knowledge I think I have of my car or of a building system. Of course, craft can also be more encouraging and bring to vivid awareness that I have managed to do something of value through working with the world I live in. But self-awareness through craft is not limited to narrow knowledge of how good I am in a particular craft; craft can also force self-awareness of our personality and character.

Craft can reveal our character to us in ways similar to how it can reveal the character of our co-workers. I recently replaced an engine mount in my Altima. I bolted the new mount to the engine and lowered the engine to line up the new mount with the bracket on the car body. All that was left was to slip the remaining bolt through the holes in the bracket and through the center of the new mount. But not so fast. Nothing I could do by jacking, pulling, or prying the engine would align all three holes. I ended up taking the mount off the engine, fastening the mount to the bracket on the body, and then trying to bolt the mount to the engine. Again, jacking, pulling, and prying the engine did not avail to get things aligned, and this engine was starting to seem stupid. I wanted this car back together, so my wife and I would have two operating vehicles. I did get the bolts to catch, but the bolts wouldn't spin

freely. I tried tightening them a few times and had to back them out because they kept turning harder. As frustration mounted I finally torqued them as hard as I could in the (unreasonable) hope that things might work. Unsurprisingly, the result was ruined threads on the bolts and in the holes. Getting the car back together would have to wait for another day.¹⁷⁰

Reflecting on this event, my first thought was “Haste makes waste.” Then I realized that what made waste was anger. Why else would I keep driving cross threaded bolts into a part that could not be easily replaced? Reflecting back now, the episode revealed not only anger, but also a sort of stubborn independence unwilling to adjust and seek a smarter method of dealing with things. Of course, these sorts of lessons are not limited to craft, but various dimensions of craft can make it especially revealing. One of these dimensions is practical urgency; craft is work and we want to achieve our wants and needs. If our work does not go well, this poses some threat to our way of life and perhaps an equal threat to our sense of competence. The urgent nature of work keeps us from treating it casually or complacently. Another dimension is the physical nature of work. This makes our successes or failures concrete and specific. It was *that* engine in *that* car, and I could not get it where I wanted it. The bolt would not go in. In addition to the contribution of practicality and physicality to our self-awareness, craft also brings the dimensions of dealing with the built world. This machine is something that others have built and that others have techniques for dealing with, and I am not in their league.

6.6 Attentiveness and creativity

Crawford argues there is an important ethical and epistemological difference between fixing, or maintenance, and making things. Things we fix are not of our own making and so “never known in a comprehensive or absolute way.”¹⁷¹ People who fix things, whether human bodies or machines, know the world as independent and separate from oneself in a way that the maker may not. When one constructs a house or a mathematical model one imposes

¹⁷⁰ Fortunately, the local farm store had identically threaded bolts and nuts of a harder grade. These let me restore the automotive threads. On the next attempt I enlisted my wife’s help.

¹⁷¹ Crawford, *Shop Class as Soulcraft*, 81.

something of oneself and one's way of thinking and being on it. By contrast, "the doctor and the mechanic have daily intercourse with the world as something independent, and a vivid awareness of the difference between self and non-self."¹⁷² Fixing things, with its inevitable failures, may well be, Crawford suggests, a remedy against narcissism. Fixing things requires a different "cognitive and moral" disposition toward things than does making them. One must be attentive rather than assertive. The mechanical arts "cultivate not creativity, but the less glamorous virtue of attentiveness."¹⁷³

The contrast with making is perhaps too strong, but there is a definite connection between attentiveness and working with a stubborn reality someone else made. Maintenance and repair, particularly of a complicated object, requires *submission* of our thinking and acting to its features. Being attentive rather than assertive means being *humble*.

Attentiveness is also required for tending plants and animals, as Crawford reminds us in a footnote. Plants and animals are independent of us as well, and really, more independent because not invented by beings like us. Wealth in plant or animal form, just like wealth in the form of steel objects, comes from nature and intelligent human effort. But with living things nature is primary. Aside from attention to genetics, all we can do is facilitate; we plant and water, but the organism must grow. It does the work of turning sun, water, and soil, or water and food into pig, popcorn, or poplar.

Making things also requires us to submit and to attend. This requires both submission to the natural world and to other people. Crawford may be right that fixing things confronts us more forcibly and keeps us from thinking that reality is up to us. But making things should teach us the same lesson. We do not create *ex nihilo*. If I want to build a chair I have to attend to what I have to fashion into a chair. Pine boards will have to be thicker than oak boards. Oak boards need predrilling to keep from splitting where a pine board would not. Screws into end grain must be longer than screws cutting across the grain of the wood. Making something requires submission and attention to materials. As discussed in the previous section, making

¹⁷² Crawford, 82.

¹⁷³ Crawford, 82.

things also demands attention to other people and their makings, both looking forward to future users and backward to existing resources and methods that can be taken up. Manufacturing might demand less by way of recognizing what is other and independent of the will than does repair. But it does exhibit many of the same features.

And craft knowledge does afford space for creativity and creative expression. Creativity means knowing reality so well that one's work is shaped by the possibilities rather than simply by what is familiar. A creative solution *finds* another way to do it by paying attention and being thoughtful. Still, creativity does build from what is familiar, and from knowledge that one already has. The creative person does not reinvent the wheel but puts a wheel at a new place. Creativity comes from mastering the insights of others and proven paths so that one can work *from* that knowledge *to* something new. Of course, I make no claims to originality with these observations about creativity and knowing. The point that creativity and freedom come from disciplined mastery has been often repeated (and rightfully so). I emphasize it here because we are concerned with the knowing that goes on in work, and creativity is part of that knowing. I also bring it up to remind us that the constrained aspects of work, i.e. working with things made by others to achieve specific purchases, do not preclude creativity.

The wide-ranging physical work that is craft provides opportunity for creative activity. Work provides material reality to know, problems to be confronted, and established ways of doing things to be furthered. Work forces us to test our creativity. Creativity in the abstract is cheap. What we make must be worked out, not only dreamed about. The new lamp must be built and revealed as the ugly or mediocre thing that it is—unless it is indeed a masterpiece. The contrarian, figure-it-out-myself mode, can just as well result in things weird as things wonderful.¹⁷⁴ Working out the concept into something concrete can show us what is good about our concept, or just as often, why familiar ways of doing things are better.

Creativity in craft may come as a solution to a problem. Something that just works in a simple way shows creativity and attentiveness. “That’s really slick” is a complement in craft

¹⁷⁴ Anyone who doubts this need only look around my house.

circles. For a technique to be “slick” in this sense is for it to have a certain elegance. It does the job well but simply in a way that makes perfect sense but was not obvious. A slick solution manifests insight that advances from what was given in a way that realizes the possibilities of the reality one is working with.

6.7 Epistemology and craft knowledge

It has been a long traispe from my opening questions in chapter one, which concerned the possibility of seeing craft as valuable knowing, to the specific statements about craft which I made in this chapter. The approach of this chapter relies on the conception of knowing that I developed over the course of that traispe. I developed that conception through examining, sometimes sympathetically and sometimes more critically, various approaches to theorizing knowing. I do not pretend to have developed a comprehensive approach to knowing—that would have to treat many aspects of knowing which I have barely mentioned. Rather I have pursued those aspects of an account of knowing which I needed to describe the knowing that goes on in craft. I have especially aimed to account for those aspects of craft knowledge that are not well described by other ways of thinking about knowing. I conclude this chapter, and the dissertation, with a few comments on the inadequacy of the conceptions of knowing which I examined when it comes to craft knowing. I discuss four such conceptions. The first is the common view that epistemology is most centrally about knowing that. The second is a stereotyped notion of understanding. The third is knowing how as described by Ryle. The fourth is Aristotle’s notion of truthing.

Of these four approaches, the view that knowing is paradigmatically knowing that some proposition is true fares the worst with regard to craft knowledge. Because of the way propositional knowledge can be easily transmitted from one person to another, this view obscures the difference between the knowing of craft participation and the knowing of craft observation or of reading about craft. Even when the participant and the observer know the same proposition, craft participation allows one to know the relevant realities in a different way than one would if he found out the proposition in a different manner. Putting propositional knowledge in the center of epistemology minimizes the differences between, for

example, testimonial and experiential knowledge of the reality a proposition describes. From this perspective, craft appears as a relatively inefficient way of learning some propositions about various things. A simple focus on knowing that certain truths obtain about the objects in question will not see any special significance in the fact that craft knowledge involves physicality and practicality. While I see those as filling out our knowledge of what we work with by giving us more modes of cognitive contact with those realities, from the standpoint of propositional knowledge physical and practical engagement is nothing more than a potential source of knowledge.

When it comes to understanding, its adequacy for describing craft knowledge varies depending on how we conceive it. I will first describe the limitations of a stereotyped form of understanding and then indicate some ways of thinking about understanding that render it more friendly to craft knowledge. The stereotyped version of understanding I have in mind is one that consists simply in knowing an adequate set of claims about some aspect of reality and seeing enough of their interrelations. Knowledge of these interrelations might or might not itself be propositional on such a view. This model is defective regarding craft in much the same way as a propositional knowledge approach is. Participating with the objects of understanding would not be knowing them, so much as it would be a more or less efficient way of obtaining knowledge that could also be obtained from reading the right books.

Understanding can, however, be spelled out in ways more adequate for thinking about craft knowledge. Understanding can be conceived, with Brewer, as an appreciative activity in relation to the known. This opens the door for seeing the significance of knowing the same reality through different modes by engaging different aspects of ourselves with the object in various activities. Understanding *could* be conceived broadly enough to encompass my account of knowing by participating-with, though it would be a bit unnatural to term the more physically and practically robust dimensions of craft knowledge as understanding. They are not about an abstract grasp of relations, but about an (often less articulate) grasp that enables one to relate to the object in various ways.

Ryle's depiction of knowing how is quite congenial to craft knowledge. What needs to be emphasized in a way that Ryle does not emphasize is that the intelligent abilities he speaks of involve knowing various objects and aspects of reality. Knowing how is not *merely* the ability to perform some feat; it is a way of being in cognitive contact with the realities with which one participates in performing that feat. Once knowing how is seen in this way, and intelligent activities are seen as ways of participating with the known, craft is revealed not merely as a locus of skill, but as a locus of rich knowing of various important aspects of reality. (Of course, Ryle's account also has inadequacies related to his behaviorism, but his description of knowing how can largely be taken up without that particular view of the mental.)

Aristotle's conception of truthing can serve well in a description of craft knowledge since it allows for a variety of activities in relation to the known. What I emphasize that he does not is the benefits of knowing the same reality through various modes of activity. I can therefore honor and value knowing that comes through working with reality to meet my needs. It is true that the geometrical work of the carpenter does not give all the knowing that a geometer has. Aristotle would, no doubt, emphasize this. What Aristotle would not emphasize, and what I do emphasize, is that the practical and physical participation with geometry gives the carpenter knowing of a sort that academic mathematics does not.

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Vita

Marlin Sommers was born in northwestern Pennsylvania, the first of five children, to Samuel and Suzanne Sommers. He attended Pilgrim Fellowship School and Faith Builders Christian School. After high school he worked in his Dad's construction business for a year before entering Grove City College as a philosophy major. He graduated in December 2010 with a B.A. in Philosophy. He accepted a graduate assistantship in the Philosophy department at the University of Tennessee, Knoxville. He received an MA in Philosophy in May 2016 and the Doctorate in May 2018.