Practical Wisdom

"Practical wisdom is central to the virtue ethical tradition, but has been neglected in the debates over the psychology of ethical virtue and educational methods of fostering it. This volume should transform those debates by turning their attention away from behavioural outcomes and towards sound practical reasoning and judgment."

–**Jonathan Webber**, *Cardiff University, UK*

"De Caro and Vaccarezza have put together a nice collection of interesting essays, each of which adroitly integrates perspectives from both psychology and philosophy on a variety of topics integral to the study of practical wisdom. This volume should be on the "wish list" of any scholars working on practical wisdom and moral psychology."

–**Audrey L. Anton**, *Western Kentucky University, USA*

Featuring original essays from leading scholars in philosophy and psychology, this volume investigates and rethinks the role of practical wisdom in light of the most recent developments in virtue theory and moral, social, and developmental psychology.

The concept of phronesis has long held a prominent place in the development of Aristotelian virtue ethics and moral education. However, the nature and development of phronesis is still in need of investigation, especially because of the new insights that in recent years have come from both philosophy and science. The chapters in this volume contribute to the debate about practical wisdom by elucidating its role in empirical psychology and advancing important new research questions. They address various topics related to practical wisdom and its development, including honesty, ecocentric phronesis, social-cognitive theory, practical wisdom in limited-information contexts, Whole Trait Theory, skill models, the reciprocity of virtue, and challenges from situationism.

Practical Wisdom will interest researchers and advanced students working in virtue ethics, moral psychology, and moral education.

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Introduction

Mario De Caro and Maria Silvia Vaccarezza

This volume collects essays from philosophers and psychologists who offer new perspectives and accounts of the traditional virtue of phronesis, or practical wisdom. Within the Aristotelian tradition, practical wisdom is the main intellectual virtue responsible for the attainment of a good life, and the wise person, whose main exemplification is the good statesman, is the model toward which one should aim. Aristotle defines phronesis as the intellectual virtue of the "practical" side of the rational soul, that is, the one whose object is "what can be otherwise" (NE VI.7, 1141 a1). Its aim is the attainment of truth in action: Although virtuous ends are set for an agent by their ethical virtues – that is, the excellences of the appetitive part of the soul – the deliberation needed to determine the right mean each virtue consists in, as well as to discern which particular action better instantiates that virtue in each case, pertains to practical wisdom:

> It is wisdom that has to do with things human, and with things one can deliberate about; … the good deliberator is the one whose calculations make him good at hitting upon what is best for a human being among practicable goods. Nor is wisdom only concerned with universals: to be wise, one must also be familiar with the particular, since wisdom has to do with action, and the sphere of action is constituted by particulars.
>
> (NE VI.7, 1141b8–17)

Thus, there can be no virtue without practical wisdom, and vice versa:

> Again, the "product" [i.e., happiness] is brought to completion by virtue of a person's having wisdom and excellence of character; for excellence makes the goal correct, while wisdom makes what leads to it correct.
>
> (NE VI.12, 1144 a7–9)

Ever since Aristotle wrote *Book VI* of the *Nicomachean Ethics*, the nature and role of practical wisdom have probably been among the most extensively discussed issues in moral philosophy, so much so that a reader might wonder what could possibly be added to its study by a new collection. Have not two millennia's worth of ink been enough to investigate all there is to practical wisdom once and for all? At the heart of this collection lies the conviction that they have not, for at least two main reasons: the resurgence of virtue ethics within contemporary moral philosophy and its recent dialogue with psychology.

Over the last decades, the resurgence of an ethics of virtue within the philosophical landscape has given discussions on practical wisdom new prominence: How should we conceive of the role of this central virtue within contemporary virtue ethical theories? Should we assign it the same importance Aristotle ascribed to it, or should we resize (if not

downsize) its role and scope? In an ethics of virtues, what should have priority: the individual virtues or phronesis that orchestrates them?

Recently, there has been much discussion on whether the prominence of practical wisdom supports ethical particularism. Many influential works by neo-Aristotelian thinkers – especially in the 1980s and 1990s – have advanced the view that practical wisdom grounds a particularistic ethics. This radical view equates the possession of virtue with perception, ruling out any role in ethics for general knowledge and principles. In his essay "Virtue and Reason," for example, McDowell identifies practical knowledge with a "reliable sensitivity," which in turn is "a sort of perceptual capacity" (1998: 51). On these readings, then (cf. Sherman 1989; Broadie 1991), phronesis is a form of knowledge of particulars that makes general knowledge and principles in ethics at best redundant, if not outright detrimental. More moderate readings have rebutted this claim and restated the role of phronesis as the master, orchestrating virtue responsible for perceiving the moral salience of particulars (see Russell 2009; Annas 2011; Kristjánsson 2015 a, b), without thereby denying the importance of generalizations in ethics or even the role of ethical theory.

A second important debate among contemporary virtue ethicists concerns the controversial claim that, since all ethical virtues are rooted in practical wisdom, acquiring practical wisdom implies becoming fully virtuous in every respect, which means that if one has one virtue, one necessarily possesses them all. This is the so-called "unity (or reciprocity) of the virtues" claim. What is at stake here is more than making a historical or philological point since some of the questions under discussion are very relevant for defining which form a viable ethics of virtues should take. These are questions like: Does phronesis require an overall virtuous character? Or does it, on the contrary, cause it? Does the reciprocity of virtues need to be actual or is it merely an ideal?

Even more recently, a fertile interdisciplinary dialogue with several branches in psychology has taken place, giving rise to a different set of questions related to the empirical reliability of the Aristotelian account of practical wisdom (Jones et al. 2013; Besser Jones and Slote 2015; Snow 2015; Annas et al. 2016; Masala and Webber 2016). While cognitive psychology has started investigating the cognitive and affective processes that allegedly underlie practical wisdom, from a developmental-psychological point of view the fundamental issue at stake concerns how this virtue can be acquired: Is it a skill to be trained? And, if so, which components or subskills need to be acquired to become practically wise? As noted by Darnell et al. (2019), the last two decades have seen many attempts by philosophers and social scientists alike to introduce the issue of phronesis into psychological inquiry (Fowers 2005; Schwartz and Sharpe 2010) and educational sciences (Carr 1995; Kristjánsson 2015a, b). Moreover, phronesis has been analyzed by developmental psychologists (Lapsley and Narvaez 2004; Lapsley and Hill 2009) as the ideal multicomponent notion that could potentially replace the three constructs (moral reasoning, moral identity, and moral emotions) traditionally adopted to explain and predict the knowledge–action gap in moral psychology and education (Darnell et al. 2019). However, it is fair to say that presently the nature and development of phronesis are far from being fully explored, so much so that no single and widely endorsed empirical model of phronesis is available to date.

There is still much to be done to promote a fertile and constructive interdisciplinary engagement between moral psychologists and philosophers. Borrowing a thought from Robert Frost's famous poem "The mending wall," Daniel Lapsley (this volume: p. 140)

describes this interdisciplinary dialogue thus:

> Repairing the wall, passing the stones from one side to the other, is an occasion for constructive engagement to achieve a common purpose.... Repairing a common wall at spring mending time is not unlike the give-and-take of interdisciplinary engagement across the philosophical and empirical boundary of moral psychology.

It is to these lively, often intertwined, debates – which touch substantive, methodological, and metatheoretical issues – that the chapters in this volume offer a set of original solutions.

The volume cannot but start with a reconstruction of practical wisdom and its functions. The three chapters that open the volume are philosophical in nature and propose as many alternative views on the role of practical wisdom. However, given that the purpose of this collection is not only to offer new responses to old questions and challenges but to do so in synergy with empirical accounts of moral character, the three chapters root their proposals in specific moral-psychological views.

In Chapter 1, perhaps the most distinctively Aristotelian in spirit of the whole collection, Daniel C. Russell offers new insights on an old topic central to any discussion on practical wisdom – namely, the reciprocity of the virtues. His main concern in this analysis is to move the focus from a conception of reciprocity as having all the virtues to what he takes to be "*the* key insight" on this issue – that is, that it is an idealization of what it takes to find the right mean between excess and deficiency with respect to emotions and actions. A challenging goal indeed, which requires interdependent virtues to be achieved:

> Like controlling dynamics at tempo, being both forthright and tactful in telling an uncomfortable truth is not to do two discrete things at the same time. Fusing both at once is part of what it is to do either of them well.
>
> (p. 8)

Russell's proposal, in short, is that the role of the idealization of reciprocity is "to highlight that interdependence," rather than to provide a generalization of what virtuous people are like. In particular, achieving an interdependent task is conceived as achieving tasks with interactivity between distinct elements. And practical wisdom "is the name we give to those competencies by which we manage interactivity both within any given virtue (the mean) and between different virtues (reciprocity)."

In Chapter 2, Mario De Caro, Massimo Marraffa, and Maria Silvia Vaccarezza defend a "virtue molecularist account" in virtue theory by arguing for the conceptual, epistemological, and ontological priority of practical wisdom, conceived as skill, over individual virtues. Their aim is to show how such account is better equipped than rival theories to address three challenges that come to virtue theory from contemporary social and cognitive psychology. First, they argue that virtue molecularism can rebut the so-called "situationist challenge" better than alternative virtue-theory accounts. Second, they consider a possible anti-rationalist objection to the importance they attribute to practical wisdom, which could make virtue molecularism seem to appeal to an obsolete hierarchical vision of the mind. Against this charge, De Caro, Marraffa, and Vaccarezza claim that "virtue molecularism not only implies declarative, procedural and conditional knowledge, but also a concurrent affective orientation to virtuous ends, as well as a cognitive-emotional ability

to perceive the moral requirements at stake in a given situation" (p. 40). Third, they argue that virtue molecularism is immune to the "automaticity challenge," which is instead effective against more traditional skill-based accounts of the individual virtues.

Christian B. Miller's Chapter 3 advances an "eliminativist" account of practical wisdom. The chapter begins by mapping out responses to two related issues – namely, the relationship between practical wisdom and the moral virtues, and the functions of practical wisdom. Miller identifies three main models: (i) the "Standard Model," according to which practical wisdom "is distinct psychologically from the moral virtues, but which is necessary for them to count as virtues" (p. 53), an example of which can be found in Russell (this volume); (ii) the "Socratic Model" proposed by De Caro et al. (2018; see also De Caro, Marraffa and Vaccarezza, this volume), which sees practical wisdom as not distinct psychologically from, and prior to, the moral virtues; (iii) the Fragmentation Model, according to which each moral virtue has its own distinctive profile which serves the functions of practical wisdom for that virtue. Following this latter approach, and analyzing honesty as a case study, Miller advances his own paradigm, that is, the eliminativist approach, which denies that "there actually *is* a distinct character trait of practical wisdom above and beyond the various capacities" and claims that "[o]n metaphysical grounds, practical wisdom does not exist" (p. 66).

The two following chapters locate practical wisdom within different psychological frameworks. In Chapter 4, Nancy E. Snow, Jennifer Cole Wright, and Michael T. Warren integrate "a broadly neo-Aristotelian conception of virtue with Whole Trait Theory" (p. 70), with the aim of developing a measurable conception of practical wisdom. They start from a working definition of phronesis as "that form or forms of reasoning which are necessary for being virtuous and for living a virtuous life," which allows them to identify four roles of phronesis: action guidance, the regulation of a multiplicity of virtues within character, emotion regulation, and reflection on one's life as a whole. They then show how the five functions of phronesis from Russell's (2009) work – comprehension, sense, intelligence, deliberative excellence, and cleverness – can be integrated with the recent "Whole Trait Theory," thus connecting social-cognitivist theories and trait theories that explain personality.

In Chapter 5, Matt Stichter expands on his previous work, and specifically on his virtue-as-skill thesis (Stichter 2018), to draw connections between his account of self-regulation and the psychological research on goal pursuit and outcomes for well-being so as to sketch a picture of practical wisdom's components, or subskills. He begins by identifying the object of the exercise of practical wisdom with "one's current conception of a flourishing life, including the conceptions of virtues that are constitutive of it, and then by extension the compatibility of other goals with that conception" (p. 96). He then unpacks and discusses the various stages of self-regulation – namely, goal setting and goal striving – and applies this framework to the specifically moral kind of self-regulation, that is, the cases where self-regulation aims at moral goals and standards, in connection with the quest for well-being. In light of this background and by adopting a bottom-up approach, he identifies two main functions of practical wisdom with respect to moral self-regulation: to critically reflect on inherited moral standards and to reflect on the goals one sets for oneself. He concludes by raising concerns for "conceptualizing wisdom as a singular skill" (p. 107), claiming that the kinds of reflection wisdom requires may still be too varied to be the result of the exercise of a single skill and may instead be the product of several interrelated skills.

In Chapter 6, Claudia Navarini, Allegra Indraccolo, and Riccardo Brunetti analyze two complementary functions of practical wisdom: on the one hand, adapting general rules to particular situations, and on the other, "using the limited information available in a given context, and supplied by possible rules, to judge the situation as a whole" (p. 115). Their experimental study aims to identify improper generalizations in cases where information available to the agent is limited; to do so, it extends the "Halo effect" to perceived moral character. The results they discuss pave the way for arguing that "practical wisdom, as the synthetic ability to grasp the moral sense within the situation, can prevent generalization from deviating from its possible moral function" (p. 115).

The two final chapters of the volume deal with practical wisdom acquisition from a developmental-psychological standpoint. In Chapter 7, Daniel Lapsley begins by recalling the components of practical wisdom (comprehension, sense, intelligence, and cleverness), as well as its functions, to explore the various psychological constructs currently being invoked to account for practical wisdom's functions and features. Then, he turns to developmental psychology in order to identify the "developmental trajectory" of practical wisdom, in the spirit of a "*principle of developmental adequacy*" (p. 139), and offers an understanding of phronesis in terms of metacognition, metal-ogical and meta-rational capacities, attentional and encoding processes, and processes underlying the development of moral self-identity.

Finally, Darcia Narvaez in Chapter 8 argues that a sound discussion of practical wisdom cannot do without an understanding of which kind of organisms humans are, the qualities that help them lead a full life, and the "kinds of action and capacities" that make a human "a proper member of its species" (p. 161). Assuming principles of species-typicality and ecological realism, Narvaez focuses on two neglected species-typical features contributing to practical wisdom: "the grounding or biosocial ecology of development and the expansive imagination or worldview of transpersonal transrationality" (p. 160).

We hope that this volume will be of interest both to students at various stages of their work and to academics who work at the crossroad between psychology and philosophy, particularly those interested in the topic of practical reason and character, broadly conceived.

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1
The Reciprocity of the Virtues

Daniel C. Russell

> One cannot be good, in the strict sense, without wisdom, or wise without virtue of character. But then the argument that the virtues are separate from each other comes undone … since as soon as there is wisdom, which is a single thing, there will be all the virtues.
>
> Aristotle, *Nicomachean Ethics* VI.13, 1144b31–4, 1145a1–2[1]

People who are learning to play a musical instrument are often surprised to discover that it is hard to play *louder* without also playing *faster*. Controlling dynamics while controlling tempo isn't like talking while driving, two discrete things done at the same time. Instead, the tasks are interdependent; one doesn't know how to control dynamics, in a skillful way, without controlling dynamics at tempo. To understand musical skill, it is not enough to enumerate the several competencies involved. We must also appreciate their interdependence.[2]

Competencies in dynamics and tempo aren't separable from each other, and if Aristotle is right, neither are the virtues. To have any virtue requires practical wisdom (*phronēsis*); but wisdom brings all the virtues with it, so to have any virtue is to have all the virtues. This is an idealization known nowadays as *the reciprocity of the virtues*.[3] And reciprocity *is* an idealization – an instructive simplification, I'll go on to argue (Section 3), but a simplification nonetheless. We know that nobody is virtuous in *every* way. (And of course, Aristotle did too.)[4]

No surprise, reciprocity has drawn a lot of attention, focused chiefly on the very idea of having *all* the virtues, that the virtues form a *set*.[5] That exclusive focus risks missing a key insight – what I argue is *the* key insight – of this idealization, and that is the distinct significance of the *interdependence* of the virtues. That is why it is wisdom that *makes* them a set: It takes wisdom to find the "mean" of a virtue; but we never have to find just one mean at a time, and the virtues aren't discrete. Like controlling dynamics at tempo, being both forthright and tactful in telling an uncomfortable truth is not to do two discrete things at the same time. Fusing both at once is part of what it is to do either of them well.[6]

The role of the idealization of reciprocity is to highlight that interdependence, and with it the distinctive challenges for wisdom and development that interdependence brings. We can begin with Aristotle's version of reciprocity, as well as the interdependence of virtues it serves to highlight (Section 1), before looking at how interdependence creates challenges all its own for learning and development (Section 2). Then we'll be in a position to see how the idealization of reciprocity, and perhaps idealization more generally, might help us better understand the nature of virtue (Section 3).

One more thing I must say up front: When I say that reciprocity is an idealization, I do not mean that it is an ideal for us to "approximate to." In fact, one of my goals in this chapter is to deny exactly that (Section 3.1).

1 The Reciprocity of the Virtues

1.1 Aristotle on Reciprocity

The reciprocity of the virtues stems from a particular way of understanding the kinds of things that virtues are.[7] For Aristotle, a virtue in the broadest sense is an attribute by which a living being is fit for the mode of life proper to its kind.[8] In the strictest sense, a virtue is an attribute of beings that live by choosing – humans – that fits them for living well through choice.[9] Or, as Aristotle puts it, virtue finds a "mean" of acting and feeling on the occasions one should, about the things one should, toward the people one should, for the purposes one should, and in the manner one should.[10]

Finding the mean takes wisdom. Virtues have good standing goals, like being forthright with the truth, but calling that goal good is a truism – like saying an archer's goal is to hit the target – since as yet it is indeterminate.[11] Practical wisdom is for discerning in a particular case just what such a goal would actually amount to, turning a good but indeterminate goal into a determinate goal that is still good.[12]

Sometimes we speak loosely of virtues, though, and call some people forthright, even when "blunt" or "brusque" would be more accurate, just because they strike us as stereotypically "forthright." Aristotle calls attributes like these "natural virtues," and in this looser sense, even children and animals have their virtues.[13] To say that virtue finds a *mean*, though, is to say that one chooses and acts so as to *suit* the situation at hand. Virtues of that sort – what Aristotle calls "genuine virtue" and "virtue in the strict (literally, chief) sense" – are intelligent, and not dispositions to stereotypical behavior.

But in that case, no intelligent virtue floats in a vacuum; forthrightness that isn't tactful and benevolent isn't the *excellence* of forthrightness, but just bluntness – it doesn't look where it's going, so to speak, but bungles and blusters its way through.[14] In order for wisdom to find even *one* mean, it has to be ready to find the mean of *other* virtues too.[15] And it is at this point that Aristotle draws the conclusion in the epigram:

> So it is clear from what we have said that one cannot be good, in the strict sense, without wisdom, or wise without virtue of character. But then the argument that the virtues are separate from each other comes undone, which one might make on the grounds that the same person is not naturally suited for all the virtues and therefore will acquire one virtue before another. This is what happens with natural virtues, but not with those virtues by which one is said to be good without qualification, since as soon as there is wisdom, which is a single thing, there will be all the virtues.
>
> (*NE* VI.13, 1144b30–1145a2)

Nowadays, we call this idealization the reciprocity of the virtues. An idealization is just what it is, since it simplifies away the limitations of our wisdom in the actual world, where

often in finding the mean we can do no more than avoiding doing the worst,[16] and where we might do better at finding the mean of generosity than the mean of courage, say, or at finding the mean of fairness than the mean of generosity.[17] And again, Aristotle knows it. The reciprocity of the virtues is not a generalization of what virtuous people are like.

So then, what is the use of this idealization? From this point on, I have to set aside what Aristotle's *own* use of it is, because I find it too hard to tell. Instead, I will argue that its best use is to highlight the distinct challenge of fusing interdependent tasks, like playing louder at tempo. First, though, I want to develop the idea that the virtues *are* interdependent in a way that's worth highlighting, before taking a closer look at interdependence in Section 2.

1.2 The Mean, Reciprocity, and Interdependence

Beverly has chaired an oral exam for Allan, a graduate student in her department. He passed, but the examiners agree that while he is smart and hardworking, Allan will probably struggle with advanced work in the discipline and should consider leaving the program. How should Beverly get this message across to Allan?[18]

Think about *why* Beverly should need to get this message across in the first place: Allan deserves to know the truth, to make an informed decision about how to spend these valuable years of his life. So the *manner* in which she should tell Allan the news is one that will serve the *purpose* for which she should tell him. To tell the truth as one should and for the purpose one should are elements of the "mean" of forthrightness, and these elements are interdependent – they cannot be understood one by one, but only together – as are all the other elements of the mean. At the level of a single virtue, doing the things one should, at the time one should, regarding the person one should, for the purpose one should, and in the manner one should are a matter of fusing interdependent tasks, like playing louder at tempo.

We can take this thought further: Since the purpose for which Beverly should give Allan the news is to help Allan, the mean of forthrightness must also include giving the news in a *constructive* way. If Beverly gives Allan the news for the purpose she should, then she cannot just make sure the message sinks in, come what may; that would be thoughtless and cruel, not helpful. Nor can she just give Allan the news as she herself would want to hear it, which might be obtuse and unsympathetic; nor in an offhand way, which would be tactless and unfeeling; nor so as to minimize her own discomfort, which would be cowardly and self-indulgent. And so on. To tell the truths one should, to the persons one should, when one should, in the manner one should, and for the purpose one should – to find the mean of forthrightness – one must tell the truth in a way that is *also* thoughtful, tactful, benevolent, courageous, and temperate.[19] And of course, these further goals are *also* indeterminate: Beverly won't find the mean of tact by making the message so soft that it doesn't sink in; and so on. Finding the mean of forthrightness and finding the mean of tact are not discrete tasks to be done merely simultaneously, but interdependent tasks to be fused. This point, of course, corresponds to the thesis that the virtues are reciprocal, which reflects the interdependence of virtue on a second level: To find even one mean, it is not enough to find just one mean.

The thesis that virtue finds a mean is a thesis about interdependence *within* a virtue, and

the reciprocity of the virtues is a thesis about interdependence *between* virtues. Interdependence on the second level arises from the elements on the first level. Beverly cannot be forthright as she should be without also delivering the news kindly and courageously; she cannot deliver the news with the kindness or courage that she should without also being forthright.[20]

For all these reasons, I am going to understand the reciprocity of the virtues as the thesis that to have any virtue is to have every virtue *because* the virtues are interdependent. More precisely, I am going to understand that thesis as an idealization that serves to capture the interdependence between virtues. I now want to look at the distinctive challenges that interdependent tasks present for human cognition and learning (Section 2), before considering more carefully how the idealization of reciprocity illuminates those challenges (Section 3).

2 Interdependence and Cognitive Load

2.1 Interdependence as Element Interactivity

Interdependent tasks, of the sorts I have sketched here, can be understood as tasks with "element interactivity."[21] An "element" is a subtask – like controlling dynamics – and any two elements "interact" insofar as successfully managing one element includes managing the other element as well; for example, part of controlling dynamics is doing so at tempo. By definition, interacting elements cannot be mastered or fully understood in isolation.

Despite the technical label, element interactivity is so familiar that it can be easy to forget. The neurologist Oliver Sacks described patients who had lost the proprioceptive ability to monitor the orientation and posture of their bodies, with an effect akin to splitting up a jazz combo into soundproof rooms: Lacking proprioception, a person might learn to close his fingers around a fork but struggle to hold it with the right pressure.[22] We carry out tasks with element interactivity all the time, fusing the elements with such fluidity that they merge into one single, simple task. Interdependence is all around us, but usually it is hidden in plain sight.

No surprise, element interactivity can also make new tasks very hard to learn, like learning to play a musical instrument – or to ride a unicycle, as Adam Morton observes:

> Some people can ride unicycles and some cannot. Of the people who cannot, some have a weak sense of balance – but some who cannot ride unicycles can walk tightropes. Some of them are physically uncoordinated – but there are people who are physically coordinated and have a reasonable sense of balance who can only with great difficulty learn to ride the unicycle. And there are a few who have only average balance and coordination for whom after half an hour of falling off it suddenly clicks, and from then on they can jump on and go.[23]

The challenge, *even* for someone who has each of the competencies required, lies in fusing those competencies, because none of them works in the particular way the unicycle demands unless they *all* work that way together. It's not as though tightrope-walkers fall over on the unicycle because they lack a "unicycle-riding faculty,"[24] or have the faculty of

balancing-while-tightrope-walking but not balancing-while-unicycle-riding. The problem is not a missing *element* but a missing *interaction*. In fact, the difficulty of a task can be understood as a function of the elements and interactions to be learned; even where elements are few, interactivity can make a task very difficult.[25]

Another way to put the point is that for tasks with interacting elements φ and ψ, any specification of what it is to do φ well must include what it is to do φ well while doing ψ well. To control dynamics well includes doing so at tempo; to balance well on a unicycle includes coordinating so as to maintain balance. And as we saw earlier, virtue is high in element interactivity, on two levels (Section 1.2): To act forthrightly is, one, to tell the truths one should, to the people one should, in the way one should, at the times one should, for the purposes one should; and two, to do all these things in a way that is also fair, tactful, kind, sympathetic. Practical wisdom is the name we give to those competencies by which we manage interactivity both within any given virtue (the mean) and between different virtues (reciprocity).

Between-virtue interactivity is important to appreciate, so the idealization of reciprocity has a useful purpose to serve in highlighting that interactivity. But the question remains just what that idealization is supposed to tell us about virtue in the world in which we find ourselves, since ours is patently *not* a world in which to have any virtue is to have them all. Before tackling that question (Section 3), though, we need to understand better just what accounts for the gap between those worlds. This brings us now to considering the distinctive demands of learning to do well at tasks with high element interactivity, and to these two questions: What are the cognitive demands of learning such tasks (Section 2.2), and what cognitive demands are involved in drawing on our learning of such tasks beyond the particular contexts in which we happened to learn them (Section 2.3)?

2.2 Complex Tasks and Learning

When a task is high in element interactivity – when it is *complex*, for short – it makes sense to speak of "understanding" the task.[26] For instance, memorizing the names of different components within an electrical circuit is a simple task; students can learn those names in isolation, so there is nothing about the names for students to *understand* in a deep way. By contrast, the role of a component within an electrical circuit as a whole *is* something for students to understand, because that role cannot be understood except in relation to the other components that make up the circuit.[27]

Naturally, learning the role of an electrical component within a circuit is also more *difficult* than just learning its name. Complex tasks have a higher "cognitive load" than simple tasks – they consume much more attention.[28] We can think of the total cognitive load of learning a task as a pie sliced three ways: "intrinsic" load, the attention that is required in virtue of the element interactivity – the sheer complexity – of the task being learned; "extraneous" load, or the attention that is consumed by distracting features of the learning environment; and crucially, "germane" load, which is the residual attention (if any!) that can be allocated to learning the task at hand.[29] Because attention – "working memory"[30] – is limited (in both capacity and duration), the combination of intrinsic and extraneous loads must leave enough working memory to be used for germane load, or else

we can't learn. Germane load is complementary with intrinsic load and extraneous load, so the sum of intrinsic and extraneous loads determines how much of total working memory remains for germane load.[31]

Notice then that extraneous load – sloppy instruction – becomes more detrimental when intrinsic load is greater, because less working memory is left for germane load.[32] So, for instance, learning simple tasks, where intrinsic load is low, is less sensitive to variations in extraneous load. However, even when extraneous load is low, the greater the intrinsic load the less working memory is left for germane load – and thus less for sufficiently deep learning.

Notice also that intrinsic load depends on the element interactivity of the task; so the practical question for learning complex tasks is how to reduce intrinsic load to leave enough attentional "space" for germane load. However, intrinsic load isn't fixed but will be different for different people, because what is an "element" for one person is not for another.[33] For an experienced electrician, understanding the dynamics of a familiar type of circuit has become something simple – the circuit as a whole is now an element, grasped all at once – but for a beginner it is still complex, a throng of elements and interactivities. Likewise, playing louder at tempo is simple for an experienced musician, complex for a beginner; holding a fork is simple for most of us, complex for someone lacking in proprioception; and so on. This is why element interactivity is easy to forget, when it is (Section 2.1): The elements have fused into a single element.

But now we seem to face a paradox: To understand the elements of a complex task is to understand them all together, but for beginners the cognitive load of grasping the elements *and* their interactivities all together exceeds the total working memory – human attention just isn't a big enough "pie." Paradoxically, beginners would already have to be experts just to get started![34]

This is a very old paradox. In fact, it is at least as old as Aristotle: One learns to write or play a musical instrument only by doing those things, but in that case one must already know how to do them in order to learn how.[35] Fortunately Aristotle's proposed solution still stands up too, and that is to distinguish between doing something in a *beginner's* way and doing it in an *expert's* way.[36] Beginners need to learn without yet understanding: For example, by learning the elements at first in isolation, and gradually introducing their interactions, students can learn a complex task as a series of simpler tasks, reducing the intrinsic cognitive load of learning at each step so as to arrive in time at understanding.[37]

So, how exactly does deferring the goal of deep understanding help learners arrive at that goal in the end? Recall that the intrinsic load of a complex task is relative to one's knowledge, because as knowledge increases the number of elements shrinks. By breaking a complex task down into elements and interactivities, "structured knowledge" begins to form:[38] what this component does and that component does, then what they contribute by doing those things together, and so on. For instance, Edwina Pollock and colleagues found that beginning student electricians performed better, both in practical applications and in conceptualization, when they broke down the elements and interactions of circuits in this way, than did beginners who studied elements and interactions all together; just as important, varying the presentation made little difference for intermediate student electricians.[39] So, as beginners build up structured knowledge – or what are called "schemas" – they grasp what had been several elements and interactivities now as a single element, or "chunk."[40] And because more advanced students have more schemas – they

grasp more chunks – they can manage more complex tasks than beginners can. What beginners have to process deliberately with scarce working memory, more experienced learners have stored as schemas they can retrieve automatically from long-term memory, reducing intrinsic load.[41] For the more experienced, element interactivity has shrunk.

In short, *tasks* with higher element interactivity require a *learning process* with lower element interactivity.[42] Notice, then, that the complex *structure* of a task is consistent with – and given the limits of working memory, actually *requires* – the piecemeal nature of *learning* that task. That is to say, the process of *acquiring* a competency for a complex task cannot mirror the intrinsic *structure* of that task. I'll argue in Section 3 that an idealization of virtue can help us appreciate the element interactivity of its intrinsic structure, since this can be so easily obscured by the piecemeal nature of ongoing development.

2.3 Transfer of Learning

Managing cognitive load is also crucial for *transferring* what one learns – learning in a way that prepares one for contexts beyond those in which one first happened to learn. Someone who can control dynamics at tempo, in just the one song he has memorized, hasn't really learned to control dynamics at tempo. Someone who is forthright in just one context, or is forthright except when compassion is required, really doesn't have the excellence of forthrightness.[43]

There are different ways of defining transfer of learning, though, and with them different ways to understand the management of the associated cognitive load. On a very simple definition of transfer, students transfer what they have learned in one context insofar as they apply it directly in novel contexts.[44] In order to increase later transfer, initial learning must be high in germane load, forcing students to build up and draw upon structured knowledge in order to make progress.[45] When learners receive a lot of real-time prompts and feedback, they progress quickly because they can see exactly what to do to solve the next problem; but because they're just following directions, they don't learn very deeply – they don't build up schemas – and so they struggle with novel problems. Likewise, students progress quickly when they encounter variations on familiar problems, but this doesn't give them practice at interpreting new situations as relevant to what they've learned somewhere else. In order for initial learning to be good preparation for later direct application, germane load must be very high: highly variable challenges, fewer external prompts, less immediate feedback. Reducing element interactivity (Section 2.2) is therefore all the more important, so as to leave more working memory available for handling greater germane load.[46]

On a subtler definition, though, transfer also includes the ability to draw upon prior learning to construct more sophisticated approaches to novel problems.[47] For example, students who haven't learned much that they can directly apply to some new problem – protecting bald eagles from extinction, say – still may have learned how to ask better questions: What are the eagles' natural predators, say, or how have the threats to the eagles' survival changed over time?[48] In addition to transferring a static schema, students can develop a dynamic capability to construct schemas for making sense of new experiences.[49]

Now, to appreciate the cognitive demands of constructing schemas in situ, imagine the following two-player card game: nine cards, numbered 1 through 9, are displayed face up,

and players take turns drawing cards until one of them wins by collecting three cards that sum to 15.[50] So, if the first player chooses 5 and the second player takes 3, then the first player shouldn't choose 7 (5 + 7 + 3 = 15, but 3 has been taken). And so on. Question: Does this game sound like child's play? It is, actually, provided you look at it from the right perspective: Arrange the cards three by three so that they sum to 15 in every direction, and the game is *exactly* tic-tac-toe. This is just a trivial example, but it demonstrates that how hard a problem is to solve depends on the perspective one takes on it. But it also illustrates that even when the right perspective makes a problem easy, *finding* the right perspective – that is, constructing the right schema – for a novel problem can be extremely difficult.[51] And this is just tic-tac-toe! Finding a useful perspective for – bringing meaningful structure to – the elements of a new situation becomes only more difficult with the introduction of element interactivity.[52]

However we define transfer of learning, the chief problem posed by complex tasks is again one of managing a greater intrinsic load than we can handle all at once. So, as with learning complex tasks, so too with transferring our learning of them: The process of developing in the task cannot, given cognitive limitations, mirror the complex structure of the task.

2.4 Complex Tasks and Virtue

Humans have potentialities for acquiring transferable competence in complex tasks. Of course, virtue involves complexities that are nothing like electrical circuits, but we might reasonably conjecture that virtue also develops by exploiting the mind's same developmental potentialities,[53] including those for building up structured knowledge – learning from experience – for making complexity more tractable (Section 2.2) in a range of relevant contexts (Section 2.3). For any given virtue, the mean presents a throng of elements – at the right time, in the right manner, etc. – and as we mature, we must come to grasp that mean as fewer and fewer elements, across an array of different situations: that this too is a situation calling for forthrightness, and here and now, forthrightness would be *this*. And between the virtues, we must also come with maturity to grasp that this situation that calls for forthrightness is *also* one that calls for benevolence, and here and now, benevolent forthrightness would be *this*.

It would take us too far afield to ask now whether the virtues do in fact develop by exploiting these same potentialities. But even if this optimistic conjecture is warranted, still *neither learning nor transfer "just happens."* Virtue is very high in element interactivity – both within and between virtues – and therefore high in intrinsic cognitive load.[54] High intrinsic load leaves less space for germane load, but transferability requires learning from the sort of practice and experience that is high in germane load. Worse, the environment in which we develop is typically high in extraneous load – missing feedback, misleading feedback, bad advice, bad examples, traumatic experiences, false friends.[55] Character development combines high intrinsic load with high extrinsic load, leaving little precious space for germane load – for learning.

My point is not to be pessimistic about the possibility of virtue. People *do* learn to find the mean, and that within an interconnected web of means; they *do* learn to communicate

difficult truths well, in ways that are benevolent, courageous, and fair-minded. But it should be clear that finding the mean, both within and between the virtues, is a remarkable achievement; and the remarkability of that achievement brings us back to a couple of points about the idealization of reciprocity.

One is that complexity, competence in managing complexity, and the transfer of competence all present special challenges that are important to pinpoint and understand in their own right. Idealizations that pinpoint these special challenges enrich our understanding of just what it is to manage complexity well in choice, action, and emotion – of what the virtues are.

The other point is that managing complexity well isn't the same thing as always getting all the elements right; for us, it *can't* be that. What virtue looks like at any moment for someone constrained by the scarcity of attention for managing complexity – that is, for any of us – will bear no resemblance to how virtue would look in a world where that resource abounded. One of the most important dimensions of managing complexity well is to manage the fact that we can never be equal to all the complexity there is to be managed. For us, part of wisdom is recognizing when one *is* out of one's depth in the first place, for instance by surrounding oneself with trusted friends and colleagues. And when one is out of one's depth, part of wisdom is then deciding how to proceed. Sometimes the thing to do is to make up the shortfall; what's less obvious, though, is that that is not *always* the thing to do.[56] This costs time, attention, and energy; in Beverly's case, it may cost more than she can give, at least without missing the opportunity to tell Allan the news when Allan needs to hear it. Perhaps she should find someone else who would deliver the news better, if she can; perhaps she must do it herself and can only try to avoid doing the worst.[57] Sometimes the wisest thing one can do is to take precautions in light of the fact that, right now anyway, one is not wise in all the ways one needs. It's too bad that sometimes the best choice is only the least bad one, but when that *is* the best choice, making it is a strategy for managing complexity well, within the world as we find it.

In a word, the reciprocity thesis should illuminate something worth appreciating about the nature of virtue in our world, but it can't do so by *resembling* virtue in our world. So we come now to the question we posed at the outset: Just what kind of idealization is reciprocity?

3 Idealization and the Reciprocity of the Virtues

3.1 Idealization, Approximation, and Alien Worlds

I said at the outset that the reciprocity of the virtues is an idealization – an instructive simplification, I hope to show, but a massive simplification nonetheless – since, as we know too well, human character isn't like that.[58] And now that we've explored both the complexity that good character must handle well (Section 1) and the cognitive demands of learning to handle complexity (Section 2), we can better appreciate *why* our world *cannot* be like that. A world in which "as soon as there is wisdom there will be all the virtues" is a