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THE VIRTUE EPISTEMOLOGY OF MARIA MONTESSORI

Patrick R. Frierson

This paper shows how Maria Montessori's thought can enrich contemporary virtue epistemology. After a short overview of her 'interested empiricist' epistemological framework, I discuss four representative intellectual virtues: sensory acuity, physical dexterity, intellectual love, and intellectual humility. Throughout, I show how Montessori bridges the divide between reliabilist and responsibilist approaches to the virtues and how her particular treatments of virtues offer distinctive and compelling alternatives to contemporary accounts. For instance, she emphasizes how sensory acuity is a virtue for which one can be responsible, highlights the embodied nature of cognition through a focus on physical dexterity, interprets intellectual love as a way of loving the world rather than as a love that takes knowledge as its object, and presents an alternative account of intellectual humility to contemporary emphases on the interpersonal dimensions of this virtue.

Keywords: virtue epistemology, Maria Montessori, embodied cognition

> [The] virtues are the *necessary means*, the *methods of existence* by which we attain to truth. [SA: 106]

This paper shows how Maria Montessori's thought can enrich contemporary virtue epistemology. Although Montessori studied philosophy under some of the leading philosophers of her day,[1] and actively engaged with the thought of philosophers like Nietzsche [MM: 69, SA: 266], James [MM: 373–4, SA: 120–4, 164], and Bergson [AbsMind: 83n], she is not generally known as a philosopher. With her lifetime focus on children, educational reform, and social justice, her intellectual endeavours might seem particularly far from the concerns of contemporary epistemology. And in fact she shows little concern for standard epistemological problems such as scepticism or precisely defining 'knowledge'. However, in both her pedagogy and her discussions of the history of science, Montessori consistently discusses the nature and cultivation of understanding. The development in recent years of 'virtue epistemology'—which seeks to 'serve intellectual communities far beyond the borders of contemporary epistemology' [Roberts and Wood 2007: 112], 'humanizing and deepening epistemology' [ibid.: 7]—opens a space for thinking about Montessori as an 'epistemologist' in this virtue tradition. The 'strongly education-oriented' direction of much recent

[1] See Trabalzini [2011: 39] and Foschi [2012: 33].

virtue epistemology[2] opens the door even wider to insights gleaned from one of the great educationalists of the 20th century.

Seeing Montessori as a virtue epistemologist is particularly easy for several reasons. Her epistemology is part of her pedagogical concern with cultivating children to be excellent epistemic agents. She situates knowledge and the attainment of 'truth' in the broader framework of humans' epistemic faculties, dispositions, and 'virtues' [SA: 106]. Her approach to 'knowledge', and even more to 'understanding',[3] is consistent with the core virtue epistemological commitment to locate 'the primary focus of epistemic evaluation' in 'intellectual agents and communities ... [and] the traits constitutive of their cognitive character' [Greco and Turri 2011: 3]. She details several central epistemic virtues, including so-called 'character virtues' such as 'humility' [SA: 106] and 'patience' [SA: 188, 1913: 231, AbsMind: 224] as well as 'faculty virtues' such as sensory acuity [Calif: 356, MM: 167ff.] or 'creative imagination' [SA: 186]. And, consistently with a common methodological approach that favours the 'combination of abstract analysis and narrative fragments' [Roberts and Wood 2007: 324], she explains and defends the importance of various virtues both in general philosophical terms and with specific reference to important examples, particularly from the history of science (e.g. [SA: 176]) and the lives of children (e.g. [Secret: 98]).

Montessori not only anticipates contemporary virtue epistemology; she makes philosophical moves that can contribute to it. Perhaps most importantly, she details pedagogical principles and concrete materials to cultivate epistemic excellence. She also situates virtue epistemology in the context of an 'interested empiricism' that supports her accounts of intellectual virtue in general and of various particular virtues. This paper focuses narrowly on Montessori's characterizations of individual virtues, showing how her attention to details of children's development and her overall epistemic framework give her distinctive and plausible accounts of various epistemic virtues. Before developing these particular accounts, I briefly explain her overall epistemology.

1. Montessori's Interested Empiricism

> Millions of items of the outward order are present to my senses which never properly enter into my experience. Why? Because they have no *interest* for me. (William James, *The Principles of Psychology*, v. 1, 402)

While this paper does not aim to lay out Montessori's whole epistemology (cf. Frierson [2014]), three features of her epistemological framework supply important background to her discussions of particular virtues. First, Montessori is an empiricist who sees the senses (including inner sense) as the 'foundation of the entire intellectual organism', such that '[t]here can be

[2] This interest is not universal amongst contemporary virtue epistemologists. Virtue epistemology is a large and diverse sub-field, and Montessori's approach fits better within certain strands than others.

[3] For virtue-epistemological defences of shifting from 'knowledge' to 'understanding', see Zagzebski [2001: 235–51] and Roberts and Wood [2007: 32–58].

neither ideas nor imagination, nor any intellectual construction, if we do not presuppose an activity of the senses' ([1913: 260]; cf. [1946: 193–4]). As with empiricists like Hume, the primary work of 'reasoning' is conducted by 'imagination', governed by 'the Association of Ideas'; processes of abstraction and reasoning are fundamentally rooted in expansive imagination rather than in some separate faculty of Reason [EHP: 14]. Second, the senses and imagination are dependent upon and governed by various *interests* in the objects of study: 'In the world around us, we do not see everything ... but only some things that suit us' [1913: 185]. Our interests determine both our basic sense perceptions, such that 'stimuli will appeal in vain to the senses, if the internal cooperation of attention be lacking' [SA: 179], and subsequent associations and reasonings we conduct on the basis of those sensations (see [SA: 102, 163, 1913: 197]). Third, Montessori sees all epistemic activity in the context of development fostered by 'exercise' (e.g. [MM: 167, SA: 157]): even our most basic cognitive capacities—the senses—develop only through activities directed in accordance with one's interests.[4]

These features of Montessori's epistemology affect her concept of epistemic virtues. For example, contemporary virtue epistemologists are generally either virtue reliabilists, who focus on basic cognitive faculties the reliable exercise of which gives rise to knowledge (e.g. Sosa, Greco), or virtue responsibilists, who emphasize traits of character for which knowers can be held responsible (e.g. Zagzebski, Baehr). Standard reliabilist virtues include truth-conducive acquired traits and supposedly innate traits such as basic sensory acuity (vision, etc.) and memory. Responsibilists emphasize virtues like open-mindedness, intellectual courage, love of knowledge, intellectual humility, and the like. Increasingly, commentators see virtue reliabilism as particularly adequate for 'low-grade knowledge', such as basic perceptual knowledge, and responsibilism as more adequate for 'high-grade knowledge', such as scientific progress (e.g. Battaly [2008]; Baehr [2011a]).

Montessori's intellectual virtues are (innately) developmentally possible capacities developed and specified through interested intellectual activity, whereby a person comes (or tends to come) to intellectually engage with (e.g. to know)[5] reality excellently.[6] Her empiricism implies that central to any Montessori 'virtue' epistemology will be an account of sensorial excellence, as for virtue reliabilists. But, consistently with an interested empiricism that rejects any 'cognition' that is wholly independent of volition, she sees *all* epistemic virtues, including even basic 'cognitive faculties', as infused

[4] A fourth distinctive claim within Montessori's epistemology, on which I do not focus in this paper, is that much of our epistemic activity is *unconscious* (see Frierson [2014]). Unconscious cognitive processes can be 'most intelligent' [EHP: 15], essential to epistemic excellence, and improvable (see [EHP: 13–17, Secret: 38, AbsMind). And against those who claim that the 'operation of cognitive faculties does not typically require an exercise of agency' [Baehr 2011: 23], Montessori emphasizes how unconscious volition (what she calls *horme*) governs even the most basic cognitive capacities (e.g. [AbsMind: 83, Secret: 59, 1913:185]).

[5] Cf. note 3.

[6] Metaphysically/psychologically, such virtues are acquired specifications of innate developmental potentials. What makes any particular modification an epistemic *virtue* is that it is conducive to excellent intellectual contact with reality (cf. Zagzebski [1996: 45]). As noted in section 4 below, the relevant sense of excellence here includes, but is not limited to, truth-conduciveness, so this definition of virtue coheres with Baehr's recent 'personal worth conception' [Baehr 2011a: 88f.]. Because this paper focuses on particular virtues, however, I cannot fully situate Montessori's account of intellectual virtue in general in the contexts of her own philosophy of mind or the wide variety of contemporary alternatives.

with volitional elements. Moreover, while biological potentials for development capacities can be innate, the actual development of cognitive capacities depends upon interested activity. Infants work at focusing their eyes and distinguishing sounds in their environment, and those who do not take *interest* in certain features (e.g. particular sounds) fail to develop even basic sensory capacities to hear those sounds (cf. Deutsch et al. [2004]). Sensation, often taken as 'paradigm' '[l]ow-grade knowledge' that can be reliable but for which '[n]o intentional action on the part of the subject is required' [Battaly 2008: 651–2], is—for Montessori—dependent upon cultivated interests, and it is something for which one can rightly be held responsible.[7] If one has to situate her on one side or another of the present divide, she is a responsibilist who includes paradigmatically reliabilist virtues such as sense perception within the scope of virtues for which one can be held responsible. Where responsibilists like Roberts and Wood reject faculties as 'virtues' on the grounds that 'We do not ..., by practicing, acquire eyes or ears or the basic power to ... see one thing in terms of another' (Roberts and Wood [2007: 85]; cf. Baehr [2011a: 22–32]), Montessori insists that all cognitive powers are 'acquired'. These powers may be, as Roberts and Wood insist, 'natural to us as human beings' [2007: 85], but only because 'the tendency of nature is to put itself in order' [1913: 141]. Even here, 'we have to ... present opportunities for activity' [ibid.] because the *way* in which sensory capacities are natural is that they emerge naturally through cognitive *exercise*. Thus, the structure of Montessori's epistemology fundamentally elides the present divide: she defends an essential unity amongst what are typically considered radically different *kinds* of 'virtue', from sensory acuity through intellectual love.

With this admittedly brief general sense of the epistemic framework that supports her overall account, I now turn to discussion of some representative virtues: sensory acuity, physical dexterity, intellectual love, and humility.

2. Sensory Acuity

> [A] great Poet must be ... a profound Metaphysician. He may not have it in logical coherence ... but he must have ... the *ear* of a wild Arab listening in the silent Desert, the *eye* of a North American Indian tracing the footsteps of an Enemy upon the Leaves that strew the Forest; the *Touch* of a Blind Man feeling the face of a darling Child. [Coleridge, to Sotheby, 7/13/1802]

The importance of 'perfect[ing] one's senses' ([DC: 146]; cf. [MM: 167ff., 1913: 205f.]) follows from Montessori's empiricism. For her, excellent

[7] This view may seem implausible in cases like Baehr's example of 'working in my study late at night [when] the electricity suddenly shuts off [and I] immediately know that the lighting in the room has changed' [Baehr 2004]. But even in that case the recognition of the darkened room depends upon at least *some* interest: someone sufficiently engrossed in reading a backlit eBook might well fail to notice the change in external lighting, and one unable to exercise vision at an early age (say, through congenital blindness) may require sensory exercise in order to coherently perceive sudden appearances of light. What Baehr calls the 'routine operation of my faculty of vision' is a 'routine' that, for Montessori, depends upon interest-driven cultivation.

perception and imagination *is* excellent reasoning, and she ascribes scientific progress in particular to excellence in sensation and association of ideas (see [SA: 163, 1946: 191]). Sensory acuity is really a cluster of virtues, involving acuity in each of many different sensory capacities, such as visually distinguishing shapes, visually distinguishing colours, distinguishing tones by pitch, and so on, as well as a general excellence in observing one's world.[8] Because all cognition starts from sensory experience, excellent senses are essential to being an excellent epistemic agent [Calif: 356]:

> [intellectually] deficient children do not 'perceive' thing/s well – ... they confuse the green colour with the yellow, and make similar mistakes ... Let us imagine what could happen to a mind which builds its ideas upon a foundation of perceptions so mistaken.

In adults, failures in olfactory and taste acuity inhibit control over our own health – 'almost all the forms of adulteration in food stuffs are rendered possible by the torpor of the senses' ([MM: 221]; cf. [Calif 296–7]); and excellence in fields such as medicine depends upon oft-overlooked virtues of sensory acuity ([MM: 219–20]; cf. [1913: 214–15]):

> the student of medicine who studies theoretically the character of the pulse, and sits down by the bed of the patient with the best will in the world to read the pulse ... if his fingers do not know how to read the sensations, his studies will have been in vain. Before he can become a doctor, he must gain a *capacity for discriminating between sense stimuli.*

One could multiply examples *ad nauseum*; but the basic point is that to be an excellent epistemic agent requires not merely *organs* of sensation but also excellent sensory susceptibilities.

Unlike many who see sensory capacity as innate and essentially passive,[9] however, Montessori sees sensory capacity as *acquired* through *interested activity*: the doctor must 'gain' this capacity [MM: 220]. Many materials in Montessori classrooms are 'sensory exercises' [MM: 167ff., SA: 157] designed to isolate and refine one particular sense. Thus, children work with 'tone bars' to develop auditory acuity, colour tablets to cultivate vision, and

[8] The various forms of sensory acuity raise the question of how to individuate intellectual virtues. While I agree with Baehr's claim that 'each intellectual virtue ... involves certain attitudes, feelings, motives, beliefs, actions and other psychological qualities that make it the virtue it is' [2011a: 103], this fails to specify how fine-grained a distinction between psychological qualities is sufficient for demarcating a different virtue. A full discussion of this topic is beyond the scope of this paper; but, briefly, Montessori distinguishes amongst virtues in two ways: in terms of the kind of cognitive contact with reality that they facilitate, and in terms of the developmental pathways of their acquisition. Thus, two intellectual traits are distinct if they allow intellectual engagement with reality differently and/or if the means for perfecting or cultivating one trait are different than the means for cultivating the other. These criteria are non-identical but, arguably, co-extensive; and Montessori makes use of both in her discussions of various intellectual virtues. Moreover, particular traits are *virtues* only in certain contexts: tonal sensitivity is an essential intellectual virtue for speakers of Chinese, less significant for English-speakers, and could be a positive hindrance in contexts where such sensitivity systematically misleads about others' intentions.

[9] For example, Sosa [1991], Baehr [2004], Roberts and Wood [2007], and Battaly [2008]. Battaly summarizes the consensus view that 'one can't help but acquire visual knowledge when one's eyes are open, one's brain is functioning well, and one is in a well-lighted and otherwise appropriate environment' [ibid.: 651–2].

even smelling jars to cultivate a sense of smell. These sensory refinements partly constitute being a virtuous knower. And both the excellent exercise of the senses and their cultivation require work. Merely being 'given quantities of beautiful colours' facilitates 'no concentration' and, thus, 'no [sense for] detail, no exactness'. Children 'become concentrated and interested' through an *effort* of sensory discrimination, and only thereby are 'their senses educated' [1946: 168]. In that sense, one can rightly take *responsibility* for the acuity of one's senses as 'the product[s] of repeated choice or action' [Baehr 2011a: 25]: the child who finally distinguishes tones or colour shades rightly feels a sense of accomplishment. Senses the reliable exercise of which is necessary for gaining knowledge are also virtues the excellence of which depends upon our activity.

In addition to and underlying excellences of particular sensory capacities is a more fundamental kind of sensory acuity, a general excellence in observing the world, 'a certain mental education, a preparation for observation' [1913: 120], an 'internal process, preparing us to receive the impression of the stimulus' [SA: 179]. Someone with acute particular senses still requires an open and attuned observational disposition. Montessori describes the epistemic excellence of heroes of the history of science as largely a matter of this attentive disposition [SA: 173–4, emphasis added]:

> Volta ... was preparing the usual ... broth of skinned frogs ... and when he hung up the dead frogs on the iron bar of the window, *he noticed* that their legs contracted ... Newton, who *felt* an apple fall upon him as he lay under a tree, and thought to himself: 'Why did that apple fall?' ... [and] Papin, ... placed ... on a level with the most learned men of his times ... . what gave him his value to humanity, and hence his greatness, was the fact that *his attention had been arrested* by the sight of the lid of a saucepan of boiling water raised by the steam.

General sensory openness to the world is epistemically excellent.

Moreover, acuity in particular senses is closely related to general observational excellence. Most obviously, general attentiveness is needed for the exercises that cultivate particular forms of acuity, and some degree of particular acuity is needed in order to be attentive. But, given Montessori's interested empiricism, the connection goes further. Acuity of particular senses depends upon an *interest in the world* that is partly constitutive of general attentiveness, and greater particular acuity *heightens* the interest that is fundamental to general attentiveness. This is particularly clear in the different pedagogical possibilities for children with different levels of (particular) sensory acuity [AbsMind: 183–4]:

> To teach the child whose senses have been educated is quite a different thing from teaching one who has not had this help. Any object presented, any idea given, any invitation to observe, is greeted with interest, because the child is already sensitive to tiny differences as those which occur between the forms of leaves, the colours of flowers, or the bodies of insects. Everything depends upon being able to see and on taking an interest.

Refined senses not only help us to see what is present, but help to make us *interested* in what is there to see. And this increase in general interest leads to yet greater sensory refinement.

With respect to both particular senses and general observation, sensory acuity spans the divide between faculties and traits, between acquired and innate virtues, and between reliabilist and responsibilist accounts of the virtues. At one end, the tendency to notice the change in light levels when the lights go out in a well-lit room is nearly innate, a matter of a minimally reliable sensory faculty [Baehr 2004]. At the other end, the sensitivity to subtle variations in the facial expression of an interlocutor, the patterns on a butterfly's wings, or the sound of a violin—variations that can reveal the interlocutor's attempt to conceal offense or a new variety of butterfly or an A-string slightly out of tune—require both highly cultivated particular senses of vision or hearing and a disposition to attend with care to one's surroundings (in at least certain respects). These dimensions of visual acuity are acquired through sensory exercise, virtues for which we can hold people 'responsible' (contrast Zagzebski [1996: 8–9, 104] and Baehr [2011a: 22–6]). Even the most 'innate' and faculty-like virtues depend upon psychological development of interests that govern attention, and even the most acquired and ascribable virtues are acquired through natural endowments by which one works towards self-perfection in a conducive environment. But epistemic excellence of any form ultimately rests on sensory acuity, both in general and with respect to particular sensory capacities.

3. Physical Dexterity

> Hands are integral to who we are as a species, as members of groups, and as individuals. If any anatomical unit deserves a reverent salute, it the hand. It is high time, then, that cognitive science and philosophy lift up this neglected appendage and attempt to learn more about its role in making us who we are.' (Jesse Prinz, 'Hand Manifesto', from Radman [2013: xvii])

A second important and—for Montessori—genuinely *epistemic* virtue is 'manual skill' [AbsMind: 150]. For her, cognition is not merely a 'mental' process; or, put more precisely, the 'mental' is a network that includes *senses and motor functions* [MM: 222–3, 1913: 206]. Her insistence on an 'interconnection between mind and muscle' [AbsMind: 141] presciently anticipates some of directions of the current 'embodied cognition' program in cognitive science and the philosophy of mind (see, e.g., Thelen [1994], Clark and Chalmers [1998], Beer [2003], Shapiro [2007], and Noë [2009]; regarding manual dexterity, see Wilson [1998] and Radman [2013]). Just as the doctor needs sensory acuity to hear variations in a heartbeat, so too she needs dexterity for 'the hand['s] ... intelligent activity' [AbsMind: 155] of holding a stethoscope stably or manoeuvring a scalpel for a difficult procedure. Moreover, intellectual activity is intrinsically action-oriented. Speaking and writing use fine-tuned and acquired muscular memory: the tongue must know how to make relevant sounds, the fingers how to write or type.

Even reading involves coordinated movements in eyes, head, and hands; and studies have confirmed that gestures play important roles in purely 'mental' activities like recalling memorized terms or doing mathematics problems 'in the head' [Stigler 1984; Goldin-Meadow 2003; Clark 2013]. 'Mental development', Montessori explains, '*must* be connected with movement and be dependent on it' [AbsMind: 141]. Finally, there is a close psychological link between the use of the hands and that *interest* that fixes intellectual attention: 'Concentration can only be achieved ... when hands come into play. Use of the hands brings a profound attention' [1946: 153].

Because 'intelligence' involves activities that 'put [the mind] into relation with the environment' [SA: 153], epistemic excellence is not fundamentally about believing true propositions but about intelligently relating to the world (cf. Zagzebski [1996: 45]).[10] And this 'relation' is twofold, a sensory taking-in of one's environment and a muscular activity into that environment [1913: 165]:

> The being who can take the most from the environment, for instance by means of the senses, is intelligent and indeed a great part of the brain contains the sensory centers ... But intelligence does not consist only of taking in, that is to say, it is not only the senses that are the foundation of the construction of the intellect but also the movements the intellect produces ... Hence we can say that by the most intelligent being we do not mean only the one who gathers most but also the being who moves the most.

With the senses, one takes in the world through attention to objects of interests. But these interests always point, at least indirectly, to ways in which one aims to work *on* the external world. One 'understands' through 'seeing the external world about a fulcrum which sustains one's own ... creation' [SA: 165]. We think through and for action, so the ability to move in nuanced and controlled ways—physical dexterity—is part and parcel of understanding the world in nuanced and controlled ways. As Alva Noë has put it, the mind 'is more like dancing than it is like digestion' [2009: xii].

Moreover, the most important muscular movements in human beings are acquired through purposeful work that cultivates intelligent habits of muscular coordination. While 'animals acquire their particular movements by heredity ..., [the human] must construct all the coordination of all his movements' [1946: 166–7]. Human physical dexterity is capable of wide variation and specific cultivation. Montessori 'once succeeded in teaching a mentally deficient girl how to sew by simply having her imitate ... the movements' and central to her writing pedagogy is the need 'to fix in the muscular memory of the child the shape of each letter' [Calif: 306–7]. Unlike mere physical strength (see [1946: 158–69]), muscular refinement into abilities to excellently carry out specific purposes in the world is a kind of intelligence, a genuinely *epistemic* virtue. And it is acquired through *activities* governed by norms of precision and perfection. Thus, these 'basic' muscular capacities

[10] As with her interested empiricism more generally, this feature of Montessori's thought is influenced by early 20th century Italian appropriations of American pragmatism (see Santucci [1963] and Foschi [2012]).

are, in human beings, faculties for which we can be held responsible: they are genuinely epistemic *virtues*.

In addition to their roles as 'organs of the inner life' ([1946: 169]; see [AbsMind: 148–57]), refined muscles sustain the *interests* that make intellectual activity possible. Thus, while Montessori's emphasis on manual skill relates to 'know-how' (see Fantl [2012]), it is also implicated in a wider range of epistemic goods. Educational efforts that seek 'concentration ... through contemplation' [1946: 153] fail because true concentration comes only from active and physical *work*, particularly with the hands ([1946: 168); see too [EHP: 9]):

> If little children are interested in colour, for example, you may think they should be given quantities of beautiful colours ... [But when] children [merely] see all these marvellous colours around them ... they have an impression of all this, but nothing remains—no knowledge, no interest, no concentration, no detail ... But if the children can move objects with their hands, their movements become correlated with their senses and their intellect develops accordingly.

Not only sensory exercise, but even mathematics and science (and creative arts and writing), are fundamentally *manual* [EHP: 8]:

> children learn the laws of pressure and tension by ... build[ing] an arch of stones... By building bridges, airplanes, railroads (calculating the curvature) they become familiar with principles of Statics and Dynamics as part of the daily school routine.

Intellectual progress depends on facility at manipulating objects. Conversely, 'lack of [physical] preparation will be an obstruction to the intelligence; it will repulse him, and kill his interest for intellectual expression as well' [1946: 77]: 'in order to form and maintain our intelligence, we must use our hands' ([ibid: 152]; see too [AbsMind: 142] and [1946:169]). Not only will one without knitting-dexterity never learn ('cognitively') the ins and outs of knitting, but a child's (or even adult's) creative self-expression is often stifled when they lack adequate dexterity to use pencils (or keyboards) effectively.[11]

While the instrumental value of physical dexterity for intellectual development is partly based on strong *psychological* connections between movement, interest, and learning,[12] if intelligence fundamentally *is* a set of operations that bring us into 'connection' with the world then we can go further. One cannot isolate pure 'knowing' from the more general and thoroughly integrated activity by which we seek to cognize-and-act-within the world. Because muscles are necessary for this work, intelligently coordinated

[11] Montessori thus emphasizes the importance of indirectly preparing a child's muscles for skills such as writing through, for instance, putting knobs on puzzle pieces that strengthen and refine the pincer grip for holding a pencil and developing sandpaper letters to cultivate motor memory in children's hands and arms. Such exercises are interesting to very young children for reasons unrelated to writing, but they cultivate the dexterity and motor skills that serve writing later. And then, when 'at a later age, the intelligence of the child will urge him to write' [1946: 77], one who already has the requisite physical dexterity is equipped to learn writing quickly and to use that writing for various (more recognizably 'intellectual') forms of self-expression.

[12] See, too, Stigler [1984], Thelen [1994], Barsalou [2002], and Lillard [2005].

muscles are part of excellent cognitive contact with it. Thus, it's no surprise that movement that cultivates brain and muscle together would attract our greatest interests, no surprise that we would best be able to engage sensorially or 'intellectually' with the world when we also have the opportunity to actively work on it. Physical dexterity that secures consistent proficiencies in tasks central to 'intellectually' understanding the world not only contributes to but is often constitutive of intellectual activity. Such dexterity can thus consist in acquired specifications of innate developmental potentials, whereby a person intellectually engages with reality excellently: it can be an intellectual virtue.

The introduction of physical dexterity as an 'intellectual' virtue might seem to highlight how Montessori's conception of such virtues is too broad, including, say, athletic excellence as 'intellectual' virtue. To some extent, Montessori cheerfully subjects herself to this charge. Consistently with recent developments in the philosophy of mind [Clark and Chalmers 1998; Shapiro 2007; Noë 2009], and against virtue epistemologies that would sharply emphasis cognitive *as opposed to* physical or other virtues, she objects to the 'grave error' of forcing 'a separation between the life of movement and the life of thought' [AbsMind: 141]. Still, Montessori's conception is not *so* broad as to include *all* physical excellences: 'to give them their right place, ... movements must [involve an] interconnection between mind and muscle' [ibid.]. Mere strength is not an *intellectual* virtue—'it is not along the lines of strength that we are able to display our greatest activities' [1913: 164]. Rather, 'the most intelligent human is the one whose muscles are the finest and most capable of [coordinated] movement', such as typing or playing violin [ibid: 166]. Even moving beyond such embodied know-how [Fantl 2012] to 'understanding' [Zagzebski 2001] or 'knowledge', Montessori breaks down familiar distinctions. Thus, for example, mathematical proof generally involves physical competence with a pencil, mnemonic proficiency in remembering formulae, and swiftness in seeing connections between proof-steps. While each element may be replaceable with substitutes, all are part of the ordinary 'mental' processes of performing a complex proof: there is no non-arbitrary way to distinguish 'mental' from 'non-mental' within these processes. As Richard Feynman put it when told that intellectual work is done 'in [the] head' and only *recorded* on paper, 'No, it's not a *record* ... You have to work on paper' [Clark 2013: 258]. While one can still draw some distinctions between properly intellectual virtues and other sorts of excellence (e.g. mere strength; and see section 4), the physical dexterity to, say, 'work on paper' is properly intellectual.

4. Intellectual Love

> 'If I should ... know all mysteries, and all knowledge ... and have not love, I am nothing.' [1 Corinthians 13: 1–2; AbsMind: 291]

Beyond virtues like sensory acuity and physical dexterity, Montessori describes various 'intellectual emotion[s]' [SA: 166], including intellectual

love. The notion that some sort of love is a fundamental epistemic virtue is common amongst those who discuss such virtues (see, for example, Zagzebski [1996: 168–76, 2012: 33f.], Baehr [2011a: 100f.], and, especially, Roberts and Wood [2007: 153–82]). Typical of this trend is the claim by Roberts and Wood that 'love of knowledge' has a 'special place' and 'pervade[s] the intellectually excellent life, showing up as a presupposition or necessary background of all the other virtues' ([ibid: 305]; cf. Baehr [2011a: 101]). Similarly, Montessori approvingly cites Dante's claim that 'The sum of wisdom is first love' [EHP: 17], and she describes in detail that 'love of the intelligence which sees and assimilates' and serves as 'the inner guide that leads [one] to observe what is about them ... It is indeed a form of love that gives ... the faculty of observing' [Secret: 98]. This centrality follows from the role of *interest* in epistemic engagement. But Montessori's 'intellectual love' [EHP: 17] is fundamentally different from that 'love of knowledge' typically emphasized in contemporary virtue epistemology. Most basically, for her, intellectual love is a way of loving one's *world* (and/or particular objects within it). The 'love of intelligence' is a 'love of environment [through which] we may envisage the irresistible urge which ... unites the child [or knower] to things' [Secret: 98]. Whereas contemporary virtue epistemologists typically distinguish intellectual love from love in general in terms of its different *object*—knowledge—Montessori identifies intellectual love in terms of the *way* in which one loves an object that can be loved in other ways.

Love of knowledge is highlighted in responsibilist accounts of the intellectual virtues (e.g. Roberts and Wood [2007: 153–82]; Baehr [2011a: 100–10]), but focusing on knowledge as the goal of intellectual virtue is even more fundamental to reliabilist accounts of the virtues. Arguably, this emphasis emerges from the historically contingent fact that contemporary virtue epistemology grew out of an Anglophone epistemology fixated on specifying what to add to 'true belief' to get 'knowledge'. To solve this problem, it makes sense to think of intellectual virtues as aiming at true beliefs, whether directly in 'love of knowledge' or indirectly through reliable faculties. For Montessori, however, defining epistemic virtues emerges from the pedagogical task of identifying (epistemically) admirable features of epistemic heroes and cultivating those traits in children. And, from this context, not only is the range of epistemic goods much broader than mere knowledge (including creativity and understanding, for instance), but the intellectual *love* that is virtuous is a love that is directed, not narrowly towards knowledge, but instead towards the world as such.

We can understand Montessori's account of intellectual love by thinking about interpersonal love. The *object* of interpersonal love is not benevolence toward another, or appreciation of her, or having a right relationship to her, or understanding her. We love *the other person herself*. But from that love flows a desire to know her better, to promote whatever is good for her, to be in a healthy relationship with her, etc. Similarly, for Montessori, the preeminent epistemic virtue is not love of *knowledge* but love of the world, of the environment, of what surrounds us. And *this* love implies a desire to *know* that world [Secret: 98]:

> It is indeed a form of love that gives them the faculty of observing in such an intense and meticulous manner the things in their environment that we, grown cold, pass by unseeing. Is it not a characteristic of love, that sensibility that allows a child to see what others do not see? That collects details that others do not perceive, and appreciates special qualities, which are, as it were, hidden, and which only love can discover? It is because the child's intelligence assimilates by loving, and not just indifferently, that he can see the invisible.

Just as one who loves another person attends to every detail of that person's demeanour and mood, so for these children—and, as she explains elsewhere, for all true 'scientists' or epistemic agents [Calif: 70]—love for environment leads to attentive epistemic engagement, which allows them to see what is 'invisible' to others. In *this* sense, love of the object takes the form of a love of knowledge about it, and Montessori even suggests that desire for 'understanding of the object' represents the virtuous 'transformation' of the 'longing to possess' that is (generally) a defective form of love [AbsMind: 219]. Still, this love is derivative from a more fundamental love of the object itself.

This emphasis on love is well integrated with Montessori's interested empiricist epistemology. Because one can experience and think about a world only in terms of interest, there must be some motivational spring of knowledge-acquisition, and love provides this spring. Given that interest is necessary for the full range of cognitive processes—from bare sensory experience through complex reasoning, long-term pursuit of knowledge, and creativity—intellectual love is a virtue that comes in varying degrees but that, in some form, is requisite for *all* knowledge-acquisition. Thus, while it has become common to see virtue reliabilists as doing a good job of dealing with 'low-grade knowledge' and virtue responsibilists as doing a better job with 'high-grade knowledge' (see Battaly [2008]), within *interested* empiricism, love—as a direct interest in something—plays a central role even in low-grade knowledge (but see note 4).

Given human finitude, 'love of the environment' is always *selective*. Epistemic agents are drawn to particular *features* of their environment, and love for these features drives attention.[13] The biologist who loves the frogs he studies, or the teacher who loves the children with whom she works, becomes particularly observant of and thoughtful about those specific features of the world. One first and foremost loves the *object* of knowledge, the star system or chimpanzees or language or subatomic particles or philosopher that one investigates. The love for this aspect of one's environment takes a particular form based on the kind of object that it is: one doesn't love subatomic particles in the same way that one loves chimpanzees. For some things (children or chimpanzees), virtuous love is inseparable from some degree of benevolence; for others, it's more like fascination or wonder,

[13] Montessori highlights how children move through various 'sensitive periods', wherein they become uniquely interested in things (such as language) that relate to their development at that stage.

in which there are little to no non-epistemic aspects of love.[14] But in all cases it involves taking a direct interest in its object, and such loves involve some intellectual component, some desire to know better the object of love. This 'intellectual love' is the properly epistemic *aspect* of a more general virtue of love.

Beyond its effective integration into her interested empiricist epistemology, Montessori's conception of intellectual love has several important advantages over love-of-knowledge alternatives. First, it integrates naturally into intellectual love features that can seem *ad hoc* on 'love of knowledge' accounts. For example, Roberts and Wood emphasize that one who is epistemically virtuous 'loves and desires knowledge *according to the discriminations of significance, relevance, and worthiness*' [2007: 155], which requires some account of how one distinguishes knowledge that is significant, relevant, and worthy from knowledge that is not.[15] In any virtue epistemology, such an account will rely on practical wisdom; there aren't detailed, abstract, necessary and sufficient conditions for, say, relevance. But Montessori's conception of intellectual love provides appropriate guidance for that practical wisdom. Virtuous knowledge-seeking is knowledge-seeking that flows from and expresses virtuous love for a worthy object.[16] Conceptions of what is worthy of love should be a part of an overall virtue ethic, so what is distinctive of epistemic analysis is an account of what sorts of knowledge-seeking appropriately express love.[17] Only that pursuit of knowledge that is an expression, not of love for knowledge, but of love for the world, is proper. Hence, one who properly loves pursues only knowledge that is significant, relevant, and worthy *in a particular sense*. Precisely what this means will vary from object to object, context to context, and person to person. Loving another person might involve providing her with a kind of privacy that would *preclude* certain forms of investigation, while loving a particular kind of frog might require dissection in order to learn about its operation (although it may also preclude vivisecting for the same purpose). But a basic concept of love provides the framework for practical reasoning about relevance, etc., rather than these features being external qualifications of the virtue.

[14] Moreover, what is virtuous to love varies from person to person, and what kind of intellectual love is virtuous varies likewise. It's no shortcoming of my love for my children—and hence no defect of intellectual love—if I do not want to know details about their circulatory system or what they did in school (see 'Let Your Child Keep his Secret' [CSW: 6–7]); but such a lack of curiosity may be a defect (of at least intellectual virtue) in doctors, teachers, or medical/educational researchers.

[15] Another problem is that of why such criteria are appropriate at all if 'truth' and 'understanding' are 'intrinsic goods' [Roberts and Wood 2007: 172].

[16] Compare Roberts and Wood's claim that 'the value of inquiry often turns on the value of the thing known' [2007: 158].

[17] An epistemological focus may also highlight new possible objects of love, such as non-Euclidean space or *E. coli*, that could be missed within a virtue *ethical* treatment of love. It might seem odd to 'love' such things, except in an epistemic sense: we certainly can't have benevolence towards non-Euclidean space, but they can be objects of direct regard for their own sakes. Ultimately, however, the justification of these objects as worthy of love is likely *not* to be epistemic. Rather, they will be loved for the sake of their order, or perfections, or as gifts from God, or for some other such reason. And love for them will not be *merely* epistemic. One ought not only intellectually to love—that is, study—*E. coli*; one ought also to admire its structure, appreciate the ecosystemic functions that it performs, thank God for it (if there is a God), avoid needlessly harming it, and so on. Even mathematical formalisms can be objects of forms of love such as appreciation, wonder, and perhaps gratitude, as well as intellectual study.

This point relates to a second advantage of Montessori's epistemology: deeper integration of *intellectual* love with the virtue of love in general. Whether something is worthy of love is not merely an epistemic question. One cannot explain why the phone book is not (generally) worthy of love without appeal to a range of human interests that go far beyond mere epistemic goods. And the epistemic value of certain objects—Aristotle's 'mean and lowly things'—that scientists rightly come to love contributes to making them lovable in other ways (cf. Jackson [2010]). The 'intellectual possessiveness' that 'shows itself when the child is so strongly attracted by his environment that ... he is "in love" with it' often 'makes the child treat it with great care and handle everything in it with the utmost delicacy' [AbsMind: 219–20]. Intellectual love and love in general are united in straightforward and foundational ways.

One must be careful, however, not to overstate the unity between intellectual and non-intellectual aspects of love. Montessori warns against thinking that the cultivation of virtuous intellectual love will lead to love that is virtuous in every respect: 'a love for science and art ... will not suffice to make [people] love each other' [EHP: 17]. Virtuous love can be directed towards multiple objects; the lover of whales or galaxies or 18th-century art is not always the best lover of neighbour. More importantly, love is a complex virtue, varying in its proper expression depending upon its object, and involving multiple and partly separable components. Just as one can be extremely benevolent towards someone without caring much to know about him, so too one can be extremely curious without having much benevolence. The perfect virtue of love would integrate all of its features over an appropriate range of objects, but one can have intense intellectual love without this implicating all the different aspects of love.[18] Despite this important qualification, however, Montessori's core insight is that the virtue of intellectual love is an *aspect* of virtuously loving *an object in the environment*, rather than love as a whole directed towards something intellectual (knowledge). And this provides for a better integration between intellectual and moral virtues.

Third, Montessori's conception of intellectual love avoids a kind of self-centredness endemic to love-of-knowledge approaches. Love in general can be understood in a possessive way: one who 'loves ice cream' or 'loves praise' loves to have those things *for herself*, to acquire, hold, and even consume (cf. [AbsMind: 216–21]). The *virtue* of love, however, is primarily self-giving rather than other-taking:[19] one loves one's children or nation or cause in a way that gives primacy to the object of love. In most interpersonal loves, other-directed love is combined with some degree of possessiveness; but in virtuous forms of such loves, the object of love takes primacy over one's subjective engagement with it. It's because I love *her* that I want to spend time with her or gain (for myself) a deeper understanding of her or be generous to her. If I take an interest in her primarily because I want to be a generous person or to gain deeper understandings or to have someone with whom to

[18] In some cases (perhaps non-Euclidean geometry), intellectual love in the form of fascination and wonder may even exhaust the scope of virtuous love.
[19] For the purposes of this paper, I stipulate this claim about love.

spend time, then I fail to love virtuously. But intellectual love conceived of as 'love of knowledge' is primarily self-centred, more like love of ice cream than love of one's children. Knowledge is a condition of the knower, so one who loves it seeks a particular condition of *herself*.

One way to avoid *brute* self-centredness is by emphasizing that love of knowledge includes love for the 'purveyance' of such knowledge to others: 'The love of knowledge would not be in the fullest sense an intellectual virtue in a person who loves it only for himself' [Roberts and Wood 2007: 164]. Even this view, however, is more like a love of ice cream, wherein one wants *everyone* to enjoy ice cream, than a love of one's children that gives primacy to the object of love. It is less directly self-centred than a purely selfish love, but still not sufficiently *loving*. A better way to avoid self-centredness would be—as Roberts and Wood do occasionally (e.g. [2007: 173]; see, too, Baehr [2011a: 30], but cf. [ibid: 109])—to shift from a love of *knowledge* (a particular mental state) to love of *truth*, where 'truth' stands apart from any particular mental states of individual knowers. The notion of truth is ambiguous between 'true beliefs' and 'reality'; but if it is understood in the latter way, then when I love truth I seek to avoid error and to deepen my understanding, not primarily as a self-centred way to better myself but as a way of honouring the truth/reality that is my primary focus. This approach resembles the 'love of environment' that Montessori endorses.

Finally, Montessori's conception of the intellectual virtue of love has important implications for virtue-pedagogy. Roberts and Wood, in a moment of pedagogical reflection, ask this [2007: 172]:

> How can one who lacks a sense of the value of something be brought to love it? The answer lies in a certain kind of education, one that treats goods like truth, grounding, understanding, and significant insight as intrinsic goods and not merely as means to other goods like employment, grades, and the accomplishment of tasks.

These claims[20] implicitly suggest that the only options for why one loves knowledge are for the sake of knowledge itself or as a means to some further good such as employment (or both). But these options are not exhaustive. To see the possibility of a third alternative, consider again the case of seeking to know another *person*. In order to avoid seeking to know someone purely for the sake of accomplishing tasks, one need not see *knowledge* of him as intrinsically good. Instead, one could see *him* as intrinsically valuable, and knowing him as a way of showing the love, respect, and affection that he is due. This different relationship between love, knowledge, and goodness suggests that, in so far as we seek to cultivate intellectual love in ourselves or others, what we need in order to make people love is not *knowledge*, but instead the *objects* of knowledge. We need to marvel at the wonders of biological *organisms* (or stars or atoms), not the wonders of biological (or astronomical or mathematical) *knowledge* [EHP: 17]:

[20] Granted, they may be primarily polemical, given the current state of education in the United States (and elsewhere).

> The child should love everything that he learns, for his mental and emotional growth are linked. Whatever is presented to him must be made beautiful ... Once this love has been kindled, all problems confronting the educationist will disappear.

5. Humility

> Love ... does not boast, it is not proud ... it is not self-seeking. [1 Corinthians 13: 4–5]

Virtuous love is humble. As noted in section 4, love puts its object before oneself, and humility captures that aspect of love. What it is to be humble, in the most general terms, is to refrain from (inappropriate) self-assertion (cf. Roberts and Wood [2007: 239, 250]). And, for Montessori, humility is a central epistemic virtue: 'it is by means of humility ... that the scientist puts himself in contact with material nature' [SA: 106]. In one lecture, after explicitly connecting humility with love, she explains, 'knowing how to forget oneself ... forms the spirit of those who in science are teachers, who discover new things' [1913: 122]. In emphasizing humility as an epistemic virtue, she is consonant with contemporary virtue-responsibilist epistemologists (e.g. Zagzebski [1996: 114]; Roberts and Wood [2007: 236–57]), but while many today see epistemic humility as primarily an *interpersonal* virtue that is *contingently* related to acquisition of epistemic goods, Montessori sees it as a broader virtue necessarily connected with those goods.

Contemporary discussions of epistemic humility generally focus on humility as an *interpersonal* virtue.[21] Roberts and Wood are typical, opposing humility to such vices as vanity, arrogance, snobbishness, domination, and selfish ambition, where these vices are understood in terms of one's relationship to *other people*. Thus, '[v]anity is an excessive concern to be well regarded by other people' [ibid.: 237] and arrogance a matter of asserting unwarranted 'entitlements' over others (see, especially, [ibid.: 244]). We might sum up these various conceptions of humility in terms of a willingness to refrain from (unwarranted or inappropriate)[22] assertion of oneself *over other people*. Humility is an epistemic virtue because it aids epistemic cooperation amongst human knowers in 'social setting[s] whose mood and interpersonal dynamics strongly affect ... intellectual processes' [ibid.: 252].

For Montessori, by contrast, humility is not intrinsically interpersonal; it is a more general willingness to refrain from asserting oneself, whether over other people or over any other thing, or Nature itself, or Truth. Roberts and Wood mention Nobel physicist Subramanyan Chandrasekhar, who contrasted himself with that 'arrogance toward nature' that leads successful scientists to think 'they have a special way of looking at science which must be right' [ibid.: 253]. Likewise, Montessori describes the contrasting example of the biologist Laveran, who was unable to recognize that mosquitos transmitted malarial parasites, even after discovering the parasites and developing

[21] But cf. Spiegel [2012].
[22] But cf. Roberts and Wood [2007: 239–40].

the requisite observations and the theoretical resources to see mosquitos' role, due to his '*arrogance* and *levity*' [SA: 176]. Having been strongly impressed by a particular biological theory that led to discoveries he considered 'an achievement of "genius"' [SA: 176], he was unwilling to look beyond these particular theories to attend to new data. Laveran is just one of Montessori's examples in which clinging to accepted scientific (or other) paradigms make people 'insensible to evidence' [SA: 179]. But, for her, this epistemic arrogance is not primarily interpersonal but is, rather, an insistence that the *world* conform to one's ideas. This conception of intellectual humility is closer to 'open-mindedness' [Zagzebski 1996: 114; Baehr 2011b] or, better, the 'firmness' that Roberts and Wood oppose to the vice of 'rigidity' [2007: 184, 193f.]. But the concept of 'humility' rightly captures the common element shared between a willingness to subject oneself to what is given by nature, to humble oneself before the tasks required by the pursuit of knowledge, and to approach other people with unassuming openness to their points of view.

In searching for knowledge, humility manifests itself in different but usually interconnected ways. Several of these primarily involve humility *before the world*, the 'highest form' of which is a willingness to let the world challenge preconceived (and even previously confirmed) ideas [SA: 105]:

> [T]he highest form of humility in men of science is their ready self-abnegation, not only in externals, but even in spiritual things, such as a cherished ideal, convictions that have germinated in their minds. Confronted with truth, the man of science has no pre-conceptions; he is ready to renounce all those cherished ideas of his own that may diverge therefrom. Thus, gradually, he purifies himself from error, and keeps his mind always fresh, always clear, naked as the Truth with which he desires to blend in a sublime union.

Humility is also manifest in all of the particular ways in which one must suppress one's ego for the sake of pursuing truth [ibid.: 104–5]:

> In all things the scientist is humble: from the external action of descending from his professional throne to work standing at a little table, from the taking off of his robes to don the workman's blouse, from having laid aside the dignity of one who states an authoritative and indisputable truth to assume the position of one who is seeking the truth together with his pupils, and inviting them to verify it, to the end not that they should learn a doctrine but that they should be spurred to activity by the truth—from all this, down to the tasks he carries out in his laboratory. He considers nothing too small to absorb all his powers, to claim his entire attention, to occupy all his time. Even when social honors are heaped upon him, he maintains the same attitude, which is to him the only true honor, the real source of his greatness.

The tangible acts of getting down and dirty for the sake of knowledge, and a willingness to devote time and attention to an 'object which is apparently of very small importance' [ibid.: 104], all reflect epistemically excellent humility.

As Montessori's scientist shows, while humility is first and foremost humility before the *world that one loves*, it also requires humility before other people. The scientist 'assume[s] the position of one who is seeking the truth together with his pupils, and invit[es] them to verify it' [ibid.: 105]. Humility before nature and humility before other human beings go hand in hand, and the true *virtues* of humility-before-nature and humility-before-others mutually reinforce one another. For all of the reasons why intellectual humility is valuable in humans' corporate search for knowledge (see Roberts and Wood [2007: 250–5]), one who is truly humble before nature will be humble before others.[23]

But while it incorporates interpersonal humility, Montessori's broader conception of humility also helps to alleviate some dangers of merely interpersonal humility. She points out, for instance, that even 'more serious' than Laveran's own errors regarding malaria was that 'hundreds and thousands of students throughout the world accepted Laveran's error with their eyes shut ... and ... not one was sufficiently independent to set about studying the phenomenon for himself' [SA: 176]. Humility before *nature* was subordinated to an excessive humility before the great 'genius' [ibid.]. Of course, *proper* humility, even before others, would not involve this sort of excessive deference. But, for Montessori, there's an *intrinsic* connection between epistemic humility and virtues of epistemic independence, autonomy, and courage.

As in the case of intellectual love, there's much to recommend in Montessori's approach to epistemic humility. It is well integrated with her account of love, providing a stronger unity of epistemic virtues than in many contemporary accounts. Relatedly, while interpersonal humility is *contingently* connected with epistemic goods because 'anti-humility vices can on occasion contribute to the acquisition ... of knowledge' [Roberts and Wood 2007: 251], humility before nature is *intrinsically* connected with epistemic goods. Even if, on occasion, one has more true beliefs as a result of arrogantly ignoring relevant phenomena, beliefs that follow from closing oneself off from what nature has to offer are not genuine epistemic goods. Moreover, as in the case of intellectual love, Montessori's explanation of how humility before other *people* is *part of* humility before truth provides an excellent and relatively determinate orientation for exercising practical wisdom in the determination of how and when to humble oneself before others.

There is one important danger of Montessori's broadened view of humility. When contemporary theorists specifically focus on *interpersonal* epistemic humility, they rightly draw attention to epistemic vices of arrogance and vanity that infect many knowledge-seeking communities (including, often intensely, professional philosophy). Subordinating humility before *others* to humility before *Truth* opens the door to self-righteous intellectual hubris, arrogantly dismissing others' views with a curt 'I'm humble before *Nature*, not before *you*.' This is a real danger for views like Montessori's, but she mitigates it in three ways. First, she (rightly) sees the epistemic danger of

[23] Moreover, Montessori's *ethics* emphasizes respect for and solidarity with others, relations that require interpersonal humility.

intellectual conformity as greater than that of excessive originality in the light of careful observation. Second, and relatedly, *most* intellectual hubris arises precisely as a failure of true humility before *nature*, a matter of sticking to cherished theories rather than remaining open to new insights. It's not even clear that self-righteous intellectual defiance of others' views that really does spring from *humility before nature* is an *epistemic* failing. Finally, even when epistemic humility before nature might seem to require something like interpersonal *epistemic* arrogance; one ought also to exercise other, non-epistemic virtues, such as respect for others. As one remains independent *in thought* for reasons of humility before nature, social virtue may require that one remain polite, respectful, and sometimes even deferential in word and deed.

6. Conclusion

This article only scratches the surface of Montessori's distinctive virtue epistemology. Important themes remain for further work. Montessori provides important philosophical discussions of other particular virtues such as imaginative creativity, autonomy, patience, and courage. And I have said little about her account of what sort of thing an intellectual virtue is in general. I've said even less about her particular focus on *children*, important both for philosophy of education and for her general practice of taking children as exemplars of epistemic excellence (e.g. [Secret: 98]), a focus that diverges from and rightly challenges many contemporary virtue epistemologists. But even without exploring these and further issues, this paper has shown that Montessori—like Aristotle (see Zagzebski [1996]), Locke (see Wolterstorff [1996]; Roberts and Wood [2007]), or Rousseau (see Hanley [2012])—should be considered not only an early virtue epistemologist, but one from whom we have much to learn.[24]

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