If Music Be the Food of Education: Thinking Elementary Music Education with Michel Serres

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This paper tries to present the thought of French philosopher Michel Serres (1930-2019) as an important source of inspiration for contemporary philosophy of education, by way of its particular relevance to *music education*. The first section argues that Serres' work, which is surprisingly little known within philosophy of education, confronts us with a radically different, *lyrical* style of philosophical and educational thinking—a "problematic" style that might nevertheless prove more apt to deal with certain contemporary issues. In the second section this argument is augmented, and contextualized, by a broader exploration of Serres' "musical metaphysics," including its most relevant epistemological and ethical ramifications. Finally, in the third and fourth sections, this contextualization again feeds back into a pedagogical reading of Serres, as we reflect on the potential practical implications of a Serresian approach to music education—how it might relate to and transform some of the existing music-educational discussions and practices.

MICHEL SERRES AS MUSICAL PHILOSOPHER OF EDUCATION

The thought of Michel Serres has never really garnered much attention from philosophy of education—at least within the English-speaking world. Apart from scattered references, the only pieces really worth mentioning seem to be an article by Michalinos Zembylas, which provides a general introduction to Serres as a philosopher of education, Denise Egéa-Kuehne's reading of Serres in the light of curriculum studies, and a series of articles by John Weaver and Marla Beth Morris due to appear in a forthcoming special issue of *Educational Philosophy and Theory*.[1] What makes this remarkable, is first of all that Serres remains one of the few thinkers within poststructuralist philosophy who extensively expresses his positive appreciation for education as a fundamental and irreducible dynamic of human life. Other than widely quoted authors like

Derrida, Deleuze, Agamben, Butler, or Latour, he has even devoted a whole volume to the topic of education: *The Troubadour of Knowledge*, or, as the original French title translates: "The third-educated" (*Le tiers-instruit*).[2] However, Serres' relative absence from philosophy of education becomes even more remarkable when one takes into account the profound originality of the educational views expounded throughout his writings. As especially Zembylas, Weaver and Morris show, and as we will show once more—from a different angle—Serres really puts education at the heart of his notion of philosophy as an inventive, interdisciplinary, and transformative *practice*, embedded in a reality that is itself radically embodied, dynamic, and multiple. Put briefly, for Serres education always reaches beyond mere socialization, technical instruction or transaction of ready-made contents, as well as beyond simple affirmation of pre-existing individual capacities and preferences. Insofar all of these processes effectively contribute to education, they only do so to the extent that educands (and educators?) can eventually break through their readily identifiable "objective" and/or "subjective" frameworks. Therefore, what Serres calls "third education," ultimately consists of a series of disruptive, trans-individual encounters with what is *not* self-evidently useful, significant or human—and out of which may emerge alternative ("third") passageways or thresholds in which genuine, transformative newness can occur.[3]

Apart from the issue of translation—with Serres being difficult to translate and many of his books still awaiting their English translations—we surmise that the main reason why Serres' thought has such difficulty seeping through to the mainstream of philosophy of education has to do with his unusually *lyrical* style of writing and reasoning. As Serres explains it himself, in his book on education:

> I do not seek, I find—and only write if I find ... Method seeks but does not find . . . Who hears the one who finds? For he demands a lot from himself and from those who study him closely: new in each line, his text is not supported by any reprise. The most difficult art is that of infinite melody, which launches itself and risks itself, wandering on the path that it

itself invents and that never returns to itself, whose leap is sustained only by its restlessness, exposed, exploring unceasingly another fragment of the earth . . . an open exodus that those trouvères, finders who go nimbly from   novelties to finds, suffer and chant. Born under a secret name, I finally found my ancestors; I have always written like a troubadour.[4]

Obviously, the lyricism of Serres' style—which he regularly contrasts with the reductionist "scopic" *gaze* of predominant theorizing—is about more than just associative musical wordplay, indicative as this may be in all its abundance.[5] On a more profound level, Serres' style seems to encompass at least three other elements: (1) firstly, a "turbulent" or "fuzzy" logic, which constantly "remixes" more culturally stable, *harmonic* forms of reality and meaning through the chaotic *noise* surrounding them, and vice versa; (2) secondly, a refusal to separate the social from the natural sciences, human aesthetics and politics from a more-than-human reality, the spiritual from the material, and an attempt to bring these irreducibly distinct domains into transformative *resonance* with one another; (3) thirdly, a *motivic* method, whereby concepts are seldom defined once and for all, but rather develop (both in the totality and every one of Serres' works) as dynamic figures of thought growing consistent by rhythmic, refrain-like recurrence.[6]

When Serres states that he writes and thinks like a troubadour, he emphatically takes distance from philosophy in the form of *critical judgment*, based on strictly linear and uniform arguments. Instead, in the itinerant singer-songwriter he discovers a figure who finds and/or "invents" sense in resonance with reality's perpetually changing landscapes, who must always listen anew, and thus exposes himself, to all the ringing elements—both cultural and natural, artistic and scientific—that "noisily" whirl about (and within) his body, in order precisely to compose adventurous new "paths" within this chaotic noise.[7] Much like in the musical geography of Aboriginal people, these lyrical paths inevitably retrace the steps of ancestors.[8] However, they can never be the result of simple imitation: for in his wake the real troubadour—that is to say, the educand-philosopher—will always again have deepened or diverted the trail of these steps/

songs, and each of the elements composing it, by harmonizing them with the noise of yet other bodies, contexts, identities, and understandings that have come to interfere with and insist upon them. As such, moreover, Serres' adventurous idea of philosophy as a practice that is essentially musical *and* educational is everything but self-indulgent or individualist. His troubadour, far from being a disinterested aesthete, presents us with a thoroughly "engaged" thought-figure, that is radically social, albeit ultimately in a posthuman, *earthly* sense. After all, never can he truly creatively act upon his own inclinations without simultaneously attending to their resonant reciprocities with both the human languages that always already signify his voice, *and* the diffuse, more-than-human noise unremittingly interfering with every such signification.[9]

MUSIC *AS* METAPHYSICS

Arguably, the potential significance of Serres' lyricism for (educational) philosophy, and for philosophy of music education in particular, cannot be fully appreciated without situating it within his broader musical *metaphysics*. Remindful at times of aspects of the philosophy of the German Romantic Arthur Schopenhauer, Serres mostly appeals to music in terms that, curiously enough, are ontic and ontological at the same time.[10] Rather than determining music's being *in* reality on the basis of a transcendental framework stipulating its a priori conditions—as philosophy *of* music usually does—his work presents music as an immediately, and therefore exquisitely, empirical (or physical) manifestation of reality's primary metaphysical conditions—namely its being irreducibly *dynamic* and (self-)*affective*. More than any other human agency, such as language or visual imagery, music is held capable of at the same time exposing *and* going beyond an all-too-human signifying logic that always again reduces reality to tentatively stable, individual, and disaffected representations—subject and object, mind and body, nature and culture, and so on. Resisting the hegemonic rigidity to which these signifying distinctions usually tend (though without denying them another, more situated value), music's affective movement is, for Serres, what uniquely and ineluctably calls to mind the pre-individual "noise" that perpetually parasitizes all human representations as their inhuman, chaotic essence.[11]

Now, where Schopenhauer ended up with a *tragic* vision of music which

was still representationalist at heart, conceiving of it as the most appeasing yet ultimately failing representation for reality's dynamic Will to satisfy its rampant desire, Serres' musical metaphysics overcomes this problem by dissolving Schopenhauer's persistently unitary and transcendent Will in an immanent multiplicity of affective vibrations. The idea that neither the world nor its human representations ever statically *are*, but instead always musically *emerge* out of chaotic noise, only makes sense if noise and music—rather than being beginning and end of a single (neg)entropic arrow—belong to the same, irreducibly multiple forcefield, reciprocating one another like the *resonance* between chord, air, and sounding board.[12] To put it differently: where paradoxically Schopenhauer's musically represented Will could only be "satisfied" by self-destruction, that is to say an absolute, static silence *excluding* music, Serres' resonant universe constantly performs itself *anew*, in a shifting multitude of local "concerts" between an elemental noisy forcefield (whose minimum level is experienced as silence) and well-ordered musical forms and practices.

Thus, for Serres, music always consists in a movement *out of* noise (often manifest as silence) that is yet also *immanent to* noise. On the one hand music clearly articulates "mere" chaotic noise into something more or less *stably* harmonic, beautiful, and meaningful. On the other hand, no musical form or practice can ever rise above the level of the singular, local *and* temporary: whether in listening or in playing, the slightest loss of attention often proves sufficient to make even the most sublime music collapse into noise again. In that sense music never overcomes noise; what it does, is "percolate" noise, which means: at the same time selecting, determining, and diverting multiple elemental movements *within* its chaos, to form a local, harmonic "turbulence."[13] Moreover, if music would definitely overcome noise, that would be the end of music too. At some point, every music-making, lest it exhausts the affective force of its forms, is bound once more to carefully expose itself to noise, so as to search for new elements of creative expression. "[M]usic moves . . . from silence to silence, having as it were a source and a point of termination. Another, interminable, stops and does not stop, as at an ill-defined edge, and begins so little that we are disconcerted by it, submerged by it. Music flows like a river, the other [noise] is the sea."[14]

Metaphysical as Serres' understanding of music is, it nevertheless is crucial to see that eventually his idea of an inherently musical universe also immediately entails epistemological and ethical ramifications which profoundly affect the conditions of any *empirical* musical practice—including music education. The following fragment already gives an indication: "It's about the passage, the same passage, phase transition or transformation, from senseless clamors to language, from barbarous language to human language, from noise to voice, from cacophony to meaning, from sea noise to harmony, from background noise to music, from white noise to information, from hubbub to [social] contract. The clamor of the multiple rumbles; […] it forms, hope or disappointment; it comes into accord, and this accord is the contract."[15] Paraphrased, one could say that whereas the metaphysical noise to which all music remains immanent, is "natural" in a decidedly *posthumanist* sense—all of reality makes noise, whether human, living or not—music, as a distinctly human practice, also always implies a cosmogonic movement of "hominization," in which the natural noise undergoes a transformation into human culture, language, science, and community.

In fact, Serres goes even further: it is *precisely* music on which we rely to mediate between noise and all the signifying endeavors of human culture. In his eyes it is music's *essential*, defining characteristic to be this pure transformative mediation that always *passes* anew *in between* senseless, diffuse noise and linguistic or discursive meaning, relating both to one another while at the same time, as mediating movement, excluding itself from their respective dominions.[16] So if music always somehow *aspires* to the formal signification of human, cultural discourses—which is why music is so often mistaken for a specific language—it can never satisfy this aspiration (as Schopenhauer would have it) without losing its distinctly musical character. The only way to prevent itself from doing so, is to "return" to noise, to allow the noise on which it always already feeds, to resurface from the background, and to disturb any fatal tendency of closing down upon fixed meaning. Thus, like the philosophical-educational figure of the troubadour, who obviously made constant use of conventional, linguistically formalized musical techniques and instruments, as well as non-musical words and imagery, *genuine* music always seduces these cultural artifices into

"becoming noisy" once more, without therefore dissipating into the chaos of noise altogether. Music is not about overcoming human signification, but about transforming it, through careful, selective exposure to the rumbling, inhuman (or dehumanized) noises outside and inside of it—nature sounds, subaltern folk tunes, extreme vocal techniques, exotic instruments—and in turn about pushing these noises to become articulate in relation to certain signifying discourses.[17]

NOISE AND THE NEED FOR PUBLIC MUSIC EDUCATION

In the last half of our paper, we want to come back more explicitly to the educational concern that instigated its writing and look closer at some of the possible *practical* implications of Serres' ideas for music education. In this first section, we elaborate a double *speculative* argument, based upon our reading of Serres, for making music once more a matter of serious public-educational concern; subsequently, the next section will conclude by presenting a threefold *practical* suggestion, that relates Serres' musical philosophy to an *instrument*-oriented practice of music education grounded in *rehearsal* and *notation*.

When it comes to the contemporary relevance, or even urgency, of *elementary* music education—such as is normally provided through compulsory, *public* education, at school—we are tempted to rethink this in response to the Serresian paradox that today's (Western) society and education are at the same time threatened by *both a lack and an excess of element*al *noise*. Regarding the first half of this paradox: this follows up on our earlier hypothesis that music, and the realm of the sonic in general, are historically underrepresented in Western (educational) theory—not merely as a subject, but also as a particular style of thinking and acting. On a more specific, empirical level, however, this epistemological and ontological observation is moreover paralleled by a dramatic marginalization of music within Western educational curricula.[18] If public education still acknowledges music as a separate subject at all, then one can increasingly observe it getting reduced to a purely functional, second-order stimulus for educands' attention to "more relevant," "objectively profitable" subjects. In addition now to the common explanation of this development as the result of education's ascending neoliberalization, a Serresian analysis might first and foremost attribute it to the same fundamental lack of attention to noise

that already marks the *whole* history of Western philosophy.

At heart namely, our all too human culture remains terrified by the idea that underneath its more or less static and uniform representations (of knowledge, value, art, social and political collectivity) would rumble a noisy chaos of indeterminate elements which we cannot grasp as individual facts, but only *listen* to, "on the go," as they ephemerally resonate with one another. Not only would the admission of this destabilizing noise deeply affect the status and content of those representations, and the way they shape public-educational dynamics; it would also problematize the predominant conviction that education is a strictly *humanist* affair, which primarily concerns the qualification, socialization and/or subjectification of singular human persons.[19] In the element of Serres' chaotic noise, what we usually call humans exist on exactly the same, pre-individual level—though not always in the same manner—as DNA, animals, robots, inanimate objects, and so on. And if the admission of noise need not jeopardize humanism *altogether*, it definitely puts every imaginable notion of human essence in a whole new perspective, situating its genesis in an irreducibly dynamic multiplicity of extra- and intra-human elements. This is precisely why public music education would be indispensable: only in music can educands learn to attend to, and get actively involved in, the ever-ongoing genetic reciprocities between our habitual and functional, all too human, representations and the wider noise of more-than-human reality. "Thanks to music, we fly like birds, dance in the three dimensions of water, gambol in the trees, discover or build places and space. But we also had the idea of doing so in the intimacy of our souls or of our confessions to others."[20]

Then how come that, as our Serresian paradox stated, music education's contemporary value would also depend on the idea that today's life is threatened by *too much* noise? Here Serres regularly echoes the stance famously expressed by Pascal Quignard in *La haine de la musique*, where he suggests that society is becoming so polluted by sound that music has more and more trouble resisting the degradation into pure background.[21] Instead of vitalizing our languages, by rearticulating the elemental, non-human noise *out* of which they emerge, the complete opposite risks to happen. The excess of music, which nowadays is

"streamed" without even the least effort, might *de*-articulate language, not to recreate it, but to induce a private *escape*—from the public, historical responsibility for its signification, into the stupor of a noise that is more deafening than being listened to. Perhaps prone to being mistaken for cultural pessimism, we believe this analysis again entails a forceful injunction to education: if first music's *exposure of/to* noise was educationally claimed to recontextualize foundational notions of human knowledge, subjectivity, and society, then now music's creative work *on* noise is appealed to so as to deal more carefully and selectively with our sprawling sonic entanglements.

It is with this in mind that Serres, who can rarely be accused of culture-political narrowmindedness, sometimes even opposes more traditional musical practices, such as those of classical music and jazz, to the "noisy" musical culture of many contemporary, electronically and/or digitally modified, genres.[22] Surely he never judges the latter *by themselves*, in the sense of an a priori Kantian judgment of taste, and he does, in fact, not consider their "essential" capacity for performing creative transitions from noise to language (and vice versa) anyhow inferior. Nevertheless, due to the fact that these genres are so often indissolubly enmeshed in (commercial) musical cultures whose massiveness, diffusion, and relative illiteracy rarely push participants to engage in more systematic, articulate ways, Serres is indeed more cautious about attributing to them the same *educational* potentiality that he seems to associate with more "restrained" traditions.

"ELEMENTARY" PRACTICES OF MUSIC EDUCATION

Supposing that the contemporary need for (philosophy of) music education has now been firmly established—on the ground that our relations to noise require urgent reassessment—the question still remains of how this impinges on concrete music-educational practices. In a modest attempt to answer this question, which obviously demands the complement of more empirical approaches, we conclude this paper by formulating suggestions for *reclaiming* three *existing* practices that, despite their long pedagogical pedigree, are increasingly under pressure today.

A first suggestion, to which Serres himself repeatedly alludes, regards the importance of an *instrument*-oriented music education.[23] Rather than solely teaching *about* music—whether by transfer of musicological content coupled to exercise in listening recognition, or endless exchange of personal tastes and impressions—a wide-ranging pedagogical focus on material instruments might afford educands the most comprehensive experience of music's precarious and creative *emergence* out of the chaotic forcefield of inhuman noise. Even compared to singing, which involves the alienating process of "instrumentalizing" one's own voice, the process of learning to make music *with* a real musical *ob-ject*—whose socio-historically formatted materiality resists straightforward personal use—still enacts much more fiercely music's turbulent mediation between noise and meaning.[24] One must, at all times, carefully negotiate the reciprocities between the instrument's irreducibly natural, physically experienced elements—the noise pervading its materials—and the human meaning which these invite one to express, through the (re)composition of certain musical turbulences (harmonies, melodies, rhythms) with(in) the noise.

It is in light of what Serres describes as the *violence* of this educational experience—both in terms of the noise which educands learn to allow/resist, and of the subjugation of their musicking bodies to new prosthetic agencies—that a second suggestion may be formulated. If in general for Serres, no true educational experience comes about without the test of disciplined, sustained exercising (*not* the test assessing an exercise's results), then all the more this seems to be emphasized in his account of music.[25] Admittedly, Serres always conceives of education as radically *inventive*, rather than *imitative*, which is exactly what exercise is mostly purported to be. His appeal to certain music(-education)al examples, however, indicates that his ban on imitation does not *ipso facto* imply a rejection of repetition, just as his idea of invention involves much more than mere spontaneous self-expression. Similar to his affirmative evocation of the experience of being forced, as a left-handed child, to learn to write with his right hand, he regularly sings the praises of the shared athletic and ascetic ethos that binds music educands in *rehearsals*, where collectively they twist their bodies and minds into becoming prostheses of their instruments and scores.[26] Such exercise,

he claims, eyes something far beyond disciplinary, imitative uniformization—even if that forms part of it, through the appeal to pre-existing musical forms, techniques, and tastes. Principally though, rehearsing—which is not coincidentally mostly at some point practiced in groups—concerns a process of *differentiating multiplication*, whereby pre-defined musical configurations are again split and/or disseminated, in new *varieties*. By arduously repeating "given" sequences of corresponding gestures and tones, the structures of their embodied aesthetic and cultural signification may begin to fluctuate, so that, temporarily losing the static self-evidence of their "common sense," they open up onto a wider flux of physical noise, in search for new expression.

As a final suggestion for concrete practices of public music education, we want to point to Serres' outspoken appreciation for the role which *notation* plays in the process of learning to play music. For Serres, who was a trained mathematician, what ultimately makes music so exquisitely fascinating is its unparalleled ability to conjure up the most dynamic, noisy affects by way of the most *precise* algorithmic transitions from one harmonic proportion to another; and concomitantly, the fact that these dynamics call forth a notation that is as universal as it is "senselessly" abstract.[27] Only thanks to a notation whose very senselessness constantly invites further expressive determination, as it attracts new noise to confound previous projections of formal sense, does music indeed present humanity with a mode of thought and practice that completely recasts all the cultural, social, political, scientific relations constituting its position in contemporary reality.

In music, Serres namely observes, incorporeal notation is definitely no longer the abstract, cognitive opposite of what we usually call the "concrete," and what also many accounts of music education tend to attribute exclusively to direct, embodied, and personally significant expression. Instead, notational abstraction expresses itself the boundless *potentiality* of any individual, concrete expression to be articulated anew, in other concrete varieties, beyond the boundaries of immediately performed, personal experience. By relating to notation, musicians are allowed both to "cut up" their culturally pre-signified relations to instruments, compositions *and* performance, and to reassemble these within the

diffuse elements of noise—to the extent that this is filtered through the "noted" discontinuities. Thus, paradoxically, learning to play an instrument requires the practice of notation precisely in order to be able to play *more* than the notes: to use them, not as stable forms of meaning, but as signposts outlining dynamic passageways, through new regions of noise.

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1 Michalinos Zembylas, "Michel Serres: A Troubadour for Science, Philosophy and Education," *Educational Philosophy and Theory* 34, no. 4 (2002): 477-502. doi: 10.1111/j.1469-5812.2002.tb00520.x; Denise Egéa-Kuehne, "The Humanities and Serres's 'New Organization of Knowledge'," *International Journal of the Humanities* 3, no. 3 (2006): 131-138; John Weaver and Marla Beth Morris, "Michel Serres: A Pedagogical Life," *Educational Philosophy and Theory*, 2021. doi: 10.1080/00131857.2021.1917368.

2 Michel Serres, *The Troubadour of Knowledge*, trans. Sheila Glaser & William Paulson (Ann Arbor: University of Michigan Press, 1997).

3 Cf. Marla Beth Morris, "Michel Serres: Divergences," *Educational Philosophy and Theory*, 2021. doi: 10.1080/00131857.2021.1917370.

4 Serres, *The Troubadour of Knowledge*, 100-101.

5 Thereby referring to the specular connotations of the Greek *theōria*. Cf. Michel Serres. *Musique* (Paris: Le pommier, 2011), 160-61.

6 Michel Serres, *The Parasite*, trans. Lawrence Schehr (Baltimore: John Hopkins University Press, 1982), 56-57; Turo-Kimmo Lehtonen, "Serres and Foundations," *Theory, Culture & Society* 37, no. 3 (2020): 3-22. doi: 10.1177/026327641989154.

7 Serres plays on the Occitan/French root of troubadour, *trobar/trouver*, which means both "finding" and "composing"—and on the Latin *invenire*, from which "inventing" derives, but which translates as "finding"; also, without any intention of gender bias, we stick to Serres' use of the male troubadour noun, even though historically there have in fact been female *trouvères*.

8 Bruce Chatwin, *The Songlines* (London: Picador, 1988).

9 Compare to Hartmut Rosa's idea of "resonance" in Hartmut Rosa, *Resonanz: Eine Soziologie der Weltbeziehung* (Berlin: Suhrkamp, 2016); or to John Dewey's thoughts on the rhythmic relations between art, nature, and civilization (cf. Leonard Tan, "Reading John Dewey's 'Art as Experience' for Music Education," *Philosophy of Music Education Review* 28, no. 2 (2020): 69-87. doi: 10.2979/philmusieducrevi.28.1.05).

10 See: Arthur Schopenhauer, *The World as Will and Representation*, trans. Christopher Janaway, Judith Norman & Alistair Welchman (Cambridge: Cambridge university press,

2010 [1844]), ch. 39.

11 Cf. Serres, *The Parasite*, whose title refers to the alternative French connotation of parasite as "noise."

12 Michel Serres, *Genesis*, trans. Geneviève James & James Nielson (Ann Arbor: University of Michigan Press, 1999), 53-57; Michel Serres, *Statues: The Second Book of Foundations*, trans. Randolph Burks (London: Bloomsbury, 2015), 192-194.

13 Turo-Kimmo Lehtonen, "Serres and Foundations," 18.

14 Michel Serres, *The Birth of Physics*, trans. Jack Hawkes (Manchester: Clinamen, 2000), 151. For a brilliant musical dramatization of this logic, see Jean-Féry Rebel's *Les Élémens* (1721), with especially the introduction *Le cahos*: https://www.youtube.com/watch?v=dnlaCenlNHk.

15 Michel Serres, *Rome: The First Book of Foundations*, trans. Randolph Burks (London: Bloomsbury, 2015), 202.

16 Serres, *Statues*, 192-195.

17 Cf. Daniel Heller-Roazen, *Echolalias: On the Forgetting of Language* (New York: Zone Books, 2005).

18 José Luis Aróstegui, "Exploring the Global Decline of Music Education," *Arts Education Policy Review* 117, no. 2 (2016): 96-103. doi: 10.1080/10632913.2015.1007406.

19 Cf. Gert Biesta, "Risking Ourselves in Education: Qualification, Socialization, and Subjectification Revisited," *Educational Theory* 70, no. 1 (2020): 89-104. doi: 10.1111/edth.12411.

20 Michel Serres, *The Incandescent*, trans. Randolph Burks (London: Bloomsbury, 2018), 124.

21 Pascal Quignard, *La haine de la musique* (Paris: Calmann-Lévy, 1996); Serres, *The Parasite*, 94ff.

22 Cf. Serres, *Musique*, 97-99.

23 Cf. Serres, *The Incandescent*, 67.

24 Frédérique Montandon, "Das Musikinstrument und die Pädagogik der Dinge," *Zeitschrift Für Erziehungswissenschaft,* 16, no. 2 (2013): 75-89. doi: 10.1007/s11618-013-0423-z.

25 Michel Serres, *Branches: A Philosophy of Time, Event and Advent*, trans. Randolph Burks (London: Bloomsbury, 2020 [2004]), 112.

26 Serres, *The Troubadour of Knowledge*, 90-91; 162-163.

27 Serres, *The Parasite*, 129; 134.