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Heeding grammar and language-games: Continuing conversations with Wittgenstein and Roth

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Abstract

This paper continues a conversation about Wittgenstein's picture of language and meaning and its potential applications for educational theorising. It takes the form of a response to Wolff-Michael Roth's earlier paper "Heeding Wittgenstein on "understanding" and "meaning": A pragmatist and concrete human psychological approach in/for education," in which Roth problematizes the use of the terms "understanding" and "meaning" in education discourse and proposes their abandonment. Whilst we agree with Roth about a series of central points, at the same time we maintain that he has taken his argument in directions antithetical to our reading of Wittgenstein's work. We offer four points of departure, exploring themes of: (i) appropriate questioning; (ii) eliminativism; (iii) language-games and grammar; and (iv) 'productivity,' explanation, and a science of learning. We conclude by discussing ways consistent with Wittgenstein's thought to go on in thinking about education.

Keywords: Roth, Wittgenstein, language-games, understanding, meaning, learning, science education

All this, however, can only appear in the right light when one has attained greater clarity about the concepts of understanding, meaning, and thinking. For it will then also become clear what can lead us (and what did lead me) to think that if anyone utters a sentence and *means* or *understands* it he is operating a calculus according to definite rules. (PI §81; See ‘References’ section for standard abbreviations for Wittgenstein’s works; the standard symbol “§” identifies numbered passages.)

But if you say: “How am I to know what he means, when I see nothing but the signs he gives?” then I say: “How is *he* to know what he means, when he has nothing but the signs either?” (PI §504)

Without question philosophy and other disciplines have been troubled by – and have troubled – the notion of ‘understanding’ as a mental state or process, and the notion of ‘meaning.’ In his recent paper in this journal, Wolff-Michael Roth (2015) takes up the challenge of what to do with the signs, “meaning” and “understanding,” in order to promote further progress in education research and practice, particularly in science education. Roth articulates that his purpose “is to stimulate a discussion about abandoning these terms from the theoretical discourse of education” (p. 26). We thank Roth for his thoughtful analysis, and in this response paper we take up his invitation to continue the discussion.

Although “understanding” and “meaning” appear central to most discussions in (science) education, Roth’s concern is that the use of these terms invariably steer perception toward an individualized view of learning and the mind, and an accompanying representational, metaphysical view of language separated from its use within specific concrete practices. Such a viewpoint, Roth argues, is “primitive” (citing Wittgenstein), lacks cogency, and, in the end, is unsuited to an “increasingly connected world constituted by (digitally sustained) relations with others” (p. 49).

Roth’s response is radical and provocative. He sets out what might best be described as an eliminativist argument for removing these signs from use in education, doing so primarily by “heeding” Wittgenstein, in addition to other thinkers. Roth’s goal is to develop what he calls a “pragmatic approach” to learning, that is, an approach that focuses on “concrete, public facts and societal relations” leading to the development of a “concrete human psychology and sociology” (p. 49). He argues for a “scientific discipline of education” that theorizes about “language-in-use” and that establishes “approaches consistent with *concrete human psychology*” (p. 42). His article contains a series of examples of scientific-oriented discourses set in schools and research laboratories in which he seeks to demonstrate how such practices can be narrated and analysed without recourse to either “understanding” or “meaning.”

In an accompanying editorial, Pernille Hviid (2016) questions the basis upon which mainstream terms such as “meaning” and “understanding” should be deleted and, recalling Leontjev, raises potential loss of distinction between the personal and collective with the removal of these terms. Hviid concludes her editorial comments on Roth by asking: “how harmful is it really to go on speaking in terms of meaning and understanding in education discourse, just like we continue to speak of the “sun setting”?” (p. 2). The broader question here is what is lost and/or gained through predetermined acts of erasure in what we might call the body of organic, specific language-games in dynamic play in concrete

situations? What is desirable and not? In what follows, we return to the specific example of talk of the sun setting, drawing on what we perceive as an important distinction that Wittgenstein makes between *language-games* and *grammar*.

Roth develops his arguments by drawing extensively on (the later) Wittgenstein. At key points in Roth's argument, Wittgenstein is called upon in a series of theoretical moves to support the idea of the superfluous, redundant nature of understanding and meaning and to shift educational discourses away from notions that privatize experience. In what follows, we respond to the original article by offering a different reading of Wittgenstein. Although we agree with Roth on a number of central points, at the same time we maintain that he has taken his argument in directions antithetical to our reading of Wittgenstein's work. Whilst provocative, he has gone too far in calling for an eliminativist solution to settle any unease or vexation we might have with the two terms in question. We think such an eliminativist approach is certainly beyond, if not opposed, to what Wittgenstein himself advocated, particularly in his later writings. In response, we raise and discuss some alternative considerations of what it might mean to "heed Wittgenstein" – using Roth's phrase – within educational research and practice.

Our response holds tight to Roth's employment of certain aspects of (the later) Wittgenstein's picture of language and meaning, though, of course, there are other angles to pursue here. Alternatively, and perhaps most obviously, Roth's use of some of Vygotsky's ideas calls for closer scrutiny. In our response we have taken up this angle only as far as to consider Roth's Marxist take – through Vygotsky – on Wittgenstein's picture of language-games. As well, more can be made of Roth's take on pragmatism, in which he plays out a kind of complicated mutuality between eliminativism and pragmatism, though whether his is Rorty's pragmatism or the pragmatism of Peirce, James, and Dewey is something we think needs further discussion. Certainly the idea of consequences is part of what Wittgenstein considers in working out his picture of language – indeed, it is in the ongoing 'flow' of things that meaning operates (e.g., see Z§§ 135, 173, 238; RFM VI §41). Finally, the issue of behaviorism in Wittgenstein and in Roth's paper might profitably be raised and discussed. However this is a tricky topic, and for that reason we veer away from introducing it in this first response to Roth's argument.

Learning as participation in concrete contexts

We are sympathetic to a cultural pragmatist view of language and learning. The picture we advocate is that in speaking we are not somehow reverting to something independent of the signs we use, a 'something' outside of language that guides, grounds, and confirms our (right) use of signs, but rather that it is performance within language – and the context and circumstances of speakers – that is central. As Wittgenstein says, "it is *in language* that it's all done" (PG §95). Roth says in this regard that, "the pragmatist position on language-in-use described here allows us – in fact requires us – to drop the idea of language as a means to make present again (re-present) whatever appears on the inside of a person" (p. 43). This very much reminds us of the keen insights developed so successfully by the noted Canadian Wittgenstein scholar, J.F.M. Hunter (1973) that, "it is not by examining and interpreting what happened [i.e., happened 'inside one'], but by doing more of the same, that one says what one thought" (p. 101). We take this to be Roth's main point, to

the effect that, “it is not the “meaning” or “understanding” of a statement that matters but its role as a move in the game” (p. 41).

The focus here is the *real* talk of interlocutors in *real* situations, a focus we see in many of Roth’s other works (including his important book, *Designing communities*, (1998)). And his emphasis on ‘concrete’ social relations as at the center of this picture of language and meaning seems to us, in general terms, to be generative, far-reaching, and fruitful.

We read Roth’s statements early in his paper concerning the integral interweaving of signs with actions as accurately following Wittgenstein. What a word ‘means’ is how I go on with it, what I do – verbally and nonverbally – when I hear or speak that sign. This is certainly part of the core of what emerges from PI §2, for example. Roth says, linking all of this to the notion of the ‘language-game,’ that “Wittgenstein actually erases the distinction between knowing our ways around the world generally and knowing a language appropriate for the specific situations ... because knowing the language of building and acting appropriately in the common activity of building a house ... has become the same” (p. 35). He goes on to say in this regard that, “we must not just compare the words and how these are assembled into statements, but the associated activities, the specific instruments and objects involved, the division of labor, the particular public arenas in which the game takes place ...” (p. 36). We find these points from Roth’s paper most convivial to our own thinking about Wittgenstein. In what follows, we now focus on four significant points in which we appear to differ.

Responding to Roth’s argument

Asking appropriate questions

Our approach to the question of how we can best address the use of such signs as “meaning” and “understanding” is quite different from that taken by Roth. In our view, it is clear that Wittgenstein does not want to rid language (and by extension, the language of education) of these signs, but rather to cut off at the root the kind of talk that leads us to ask ‘inappropriate’ questions of these signs, which would in turn lead us onto paths that involve us in the misuse of them.¹ Indeed, the first part of the *Investigations* (to PI §21, and perhaps up to PI §43) has as a main project developing an argument to head off certain kinds of inquiry into – or theorizing about – language and meaning. This is as well how Wittgenstein opens the discussion in *The Blue and Brown Books*, pointing out that by asking, “what is the meaning of a word?” we are led by analogical resemblance to other questions to seek a substantive, and by doing so experience ‘mental cramp.’ Wittgenstein says:

The questions “What is length?”, “What is meaning?” “What is the number one?” etc., produce in us a mental cramp. We feel that we can’t point to anything in reply to them and yet ought to point to something. (We are up against one of the great sources of philosophical bewilderment: a substantive makes us look for a thing that corresponds to it). (BB, p. 1)

In our view, Roth’s eliminativist argument is based precisely on the attempt to look for just such “a thing” in the cases of “meaning” and “understanding,” and, not finding it, he

¹ We follow the important work of Warren Goldfarb (1983; 1992), for example, in this.

thus resolves to change our language by abandoning these signs altogether.² The need to head off of these kinds of inquiries is emphasized by Wittgenstein at many places: e.g., see: “The mistake is to say that there is anything that meaning something consists in” (Z §16).

It would be Wittgenstein’s course to interrupt Roth in his talk about language and the particular problems concerning the denotation of certain specific signs. To have gone this far is already to have gone a step too far, i.e., to have set up problems concerning denotation for our understanding of language, and we think that in his reaction to these problems Roth develops a position at odds with Wittgenstein. We note, however, that it may be fairer to read Roth here as simply defending an independently developed position from possible objections. At any rate, from here Roth’s discussion moves into talk about ‘production’ and ‘productive activity,’ of content and intelligibility, and from these into the need for different kinds of explanatory accounts of what we in fact say in concrete situations, all as prolegomena to effect a *science* of learning. The necessary, early casualties of Roth’s argument are certain signs which need to be dropped from use.

Eliminativism

Quite apart from what Wittgenstein had to say about the matter, we note two concerns with eliminativist arguments of the sort proposed. First, it is difficult to remain consistent with one’s eliminativist principles once you start. Even though Roth is purportedly abandoning mental constructs such as ‘understanding,’ his own paper still employs a range of similar kinds of terms, all of which, presumably, ‘denote’ problematic ‘metaphysical’ states, processes, or entities. For example, Roth says such things as:

“... is followed by changes on the monitor that all those present know to be the results of shifting the two graphs ...” (p. 38);

“... is followed by an action that others perceive to be taking a scan ...” (p. 40);

“... so that what we recognize to be the same noise-word ...” (p. 42);

Our point is that “know” and “perceive” in the first two statements evidently enough stand for something like “understand”, and “recognize” in the third sentence is something more than a mere reaction to stimulus. Perhaps this serves as illustration of how difficult it is to narrate a view of language that so sharply contrasts with the mainstream. Educational language is historically set up to describe and promulgate the individual mind.

Second, it is difficult to stop an eliminativist approach once you have started eliminating things. One starts with “meaning” and “understanding,” then moves on to other ‘denotation-troubled’ signs like “thinking/thought,” “belief,” “idea,” perhaps “judgment,” “hope” – indeed, most psychological-type terms. For example, in Roth (2016), terms such as “(mental) schema,” “mental structures,” “constructions,” and “(mental) representations,” along with “meaning” and “conceptions” are similarly cast into the “metaphysical realm” (see p. x). Likewise, how long can various signs such as “same,”

² See also Lundegård & Hamza (2014) for an interesting take on the problem of ‘seeking substantives.’ For Lundegård & Hamza, “Wittgenstein ... describes how our observations of everyday actions have led to our talking about underlying entities” (p. 140), where these entities underlie or regulate action.

“different,” “quality,” and signs like “quark,” “gravity,” “light waves,” “justice,” “God,” “democracy,” etc., hold out from being discarded, or at least consigned to interminable debate as to the realities of their denotated referents? Roth (2015) himself does explicitly eject from use “concepts” along with “understanding” and “meaning” (see p. 27), and as well indicates problems of denotation infecting signs like “the,” “for,” etc. (see p. 33). And are the connexions Wittgenstein himself indicates tying “understanding,” for example, to many other key signs/concepts (e.g., “can,” “is able to,” “know”) tight enough for these in turn to be similarly imperiled by Roth’s eliminativist programme (e.g., see PI §§150-151)?

Now to Wittgenstein, who was quite explicit not only that we not change language in our investigations (e.g., “Philosophy may in no way interfere with the actual use of language; it can in the end only describe it. ... It leaves everything as it is” PI §124), but that our only cogent and appropriate task is to get a clearer view on how we use signs (like “understanding” and “meaning”). For example, Wittgenstein says: “In order to get clearer about the grammar of the word “understand”, let’s ask: *When* do we understand a sentence? – When we’ve uttered the whole of it? Or while uttering it?” (PG §12). In distinction to Roth’s program of eliminativism, Wittgenstein recommends instead the rehabilitation of words: “What *we* do is to bring words back from their metaphysical to their everyday use” (PI §116). This signifies a very different response than to changing our language.

Moreover, it is a difficult eliminativist argument that holds (1) it is how signs get *used* by speakers that is the important thing about language, but (2) at the same time we can discard certain signs by virtue of problems with their *denotations*. In saying this we are not, of course, advocating a simple and straightforward ‘meaning is use’ equation here, matters being far more complicated than this in Wittgenstein’s picture of language and meaning. As Roth argues, “the theoretical and empirical discourses of (science) education are populated with the terms “understanding” and “meaning.” Whatever these terms denote, however, is elusive and not available in language itself” (p. 42 – and see again Wittgenstein’s comment at PG §95, quoted above). This of course would be a problem for *all* signs, at least for all signs that purportedly denote or designate something, if we take up a denotation perspective on meaning. But more importantly, how justifiable is it to argue for (1) and at the same time import (2) to eliminate specific troublesome signs which are considered troublesome only in terms of denotation? If particular signs have to be abandoned, the argument for their abandonment would logically have to be made in terms of problems with their use, in the context of Roth’s argument here. Is it justifiable to use the theory that is in the course of being rejected in order to promote the alternative theory (or ‘picture’) being adopted? Problems with a theory can provide reasons to drop it; but by having switched to a ‘use’ picture of language and meaning, one has *ipso facto* already abandoned referential/denotational theory of meaning, and so can no longer use it (at least not in the way Roth uses it, viz., to warrant abandoning two particular signs).

We turn next to consider Roth’s understanding of ‘language-games,’ and then to the connection Roth makes between language-games and what he calls “productivity,” and how this latter turn leads him to explanation and science.

‘Language-games’ and ‘grammar’

In the picture of language and meaning drawn by Wittgenstein, the parts called “language-games,” “grammar,” and “rules” are central, though Wittgenstein almost coyly resists setting these out in definitive terms (e.g., see PI §65). They are not theoretical terms, after all, in the spirit of David Lewis (1970) or Carl Hempel (1965), for instance, but rather are different though interconnected ways to picture language.³ What does seem reasonably clear is that the notion of ‘language-games’ pictures the motile force in language, i.e., that which, when played, takes us from sign to sign (in a broad sense); that ‘grammar’ is a matter of the loose and flexible set of connexions any sign has with other signs, connexions and paths which have been blazed out through histories of playing a range of language-games with signs; and ‘rules’ the normative aspect of playing specific language-games with specific signs. Again, we recognize that this is a much-oversimplified drawing; indeed, as Wittgenstein alerts his reader, “in fact we do the most various things with our sentences” (PI §27).

Wittgenstein provides many particular examples of language-games throughout his later writings, too numerous to enumerate here. In PI §§23, 25, however, Wittgenstein gives us a clue as to what he is trying to get us to picture with the notion of ‘language-games’: they are activities like “forming and testing a hypothesis ... guessing riddles ... asking, thanking, cursing, greeting, praying” and “commanding, questioning, recounting ...”.

In view of this, from our perspective we observe Roth first calling a too-wide range of ‘activities’ “language-games,” and claiming that scientists play different language-games from non-scientists (e.g., see pp. 37-38). Of course, scientists are often engaged in activities that most of us aren’t. Most of us do not use high-powered microscopes, for instance, and do not have the technical skills to work such instruments, nor have mastery of the relevant technical vocabularies. But this does not entail that the language-games in play are different. For example, in analyzing a sample of the dialogue of a small group of scientists, Roth says that their “game is about making the light fall through the photoreceptor cell” (p. 38). Here we suggest that this is not a good example of a language-game; it is better narrated as one activity in the course of which the participants will ask questions, make observational remarks, give orders, etc., and *these*, intermixed with the nonverbal actions, we would contend, are language-games. In other words, the language-games played by scientists are to a large degree the same games played by the rest of us (i.e., “commanding, questioning, recounting ...”). The difference is that scientists play these games with ranges of signs and connexions between signs radically unfamiliar to most of us. Of course, a lot of science is done in the language of various maths, and these would be language-games that most of us would not know how to play. But that doesn’t seem to be Roth’s point.

Here we caution against calling overarching contexts, goals, or activities “language-games,” and instead see these as composed of many players in many particular situations playing multiple language-games and oriented around innumerable, varying pictures. Thus, for example, Roth says things like, “... the language-game played is schooling ...”

³ For example, see Hempel (1965): “Theoretical terms ... usually purport to refer to not directly observable entities and their characteristics; they function ... in scientific theories intended to explain empirical generalizations” (p. 179); and see Lewis (1970), who says that a theoretical term is “introduced by a given theory T at a given stage in the history of science” (p. 428).

(p. 44), and that the game played by the scientists in his analyses lies “within the larger game named to be “production of scientific knowledge”” (pp. 40-41), and that the language scientists use “is for accomplishing a particular move in the overall language-game “the production of scientific knowledge”” (p. 41).

Second, what strikes us in these discussions is the conflation between *what* gets talked about with the *ways* (i.e., language-games) in which what gets talked about gets talked about, as one way of putting this. Our feeling, in other words, is that Roth’s arguments could be further strengthened and nuanced by making more of Wittgenstein’s notion of ‘grammar,’ and thus diffusing the confusion between content and the ways (i.e., language-games) in which we use, or move between, signs.

This confusion can be seen in the several short analyses Roth offers which he intends to illustrate the application of his pragmatic and concrete science of learning; it is a confusion we think can be removed by getting a clearer view of Wittgenstein’s picture of language-games and by closer attention to the picture of grammar. These mini-analyses consider: (1) the difference between an astronomer’s professional ‘scientific’ talk in the observatory and their day-to-day talk with their young son (pp. 43-44); (2) science students learning to use the signs “entropy” and “enthalpy” (p. 44); and (3) science students learning new words and phrases in general (p. 48). The basic aim of these analyses is to show that, “rather than considering students’ inappropriate (“poor”) “understanding” or “misplaced meanings,” the pragmatic approaches leads us to describe and explain the kind of language-games that they participate in. The ones most commonly played are different from those of scientists, though many aspects (like words) appear in both” (p. 43). In terms of the case of the astronomer and her son, Roth comments:

We do not find it surprising, therefore, that an astronomer points out to her son the marvelous spectacle of a *sunrise* or *sunset* – even though at work she would never speak about the sun as moving (setting, rising). At the instant that she and her son look at the rising or setting sun, they are playing a game different from that played in the astronomical observatory, where the very entities invoked (here celestial bodies) tend to be different. (pp. 43-44)

Our alternate reading is that while astronomer and son talk about things differently, they are not for that playing different language-games. As well, is it clear, as Roth notes, that the difference here in language-games is a matter of the difference in actual entities “invoked” by the signs in question? The astronomer’s son is familiar with one grammar of the sign “sun”; the astronomer, while familiar with that grammar, is also familiar with other grammars (e.g., that “sun” – and “earth,” “planets,” etc. – are connected to “regular orbits”) with which the son is not familiar. We might also say that this astronomer is familiar with – or is accountable for – a more *extended* grammar of “sun,” at least relative to their young interlocutor.⁴

⁴ We note here, however, the problematic way of talking about “one grammar” or “other grammars,” though we are not quite sure yet just how to talk about these parts of the picture of language without such awkwardness.

In connection to Richard Rorty's pragmatism, Roth notes that "... what we recognize to be the same noise-word – e.g., "force," "heat," or "velocity" – actually have different, for students generally unfamiliar uses when they come to school and science class" (p. 42). This comes across to us as a beginning to taking up that angle of Wittgenstein's picture that concerns what he calls "grammar".

We consider in a similar way the second case Roth analyzes, viz., about science students learning new terms. He writes:

New words afford the changing of old and the playing of new games, not just the naming of things unknown before, such as when physics students encounter words such as "entropy" or "enthalpy," which enrich the language-games (not just language!) that can be played while talking about the transformations (changes of state) of physical systems. (p. 44)⁵

So, what *does* happen when a student encounters for the first time a new sign or word like "entropy" or "enthalpy"? A variety of circumstances can characterize such first encounters, but likely a text or an authoritative person uses the sign in some way, in some form of a sentence, and in doing so *shows* the student how that one sign connects to particular other signs. See, for example, this passage from an elementary school book, *Science 5*, (2008), from the Ontario school board:

There are many forms of energy that can be used to do work: ... Heat – energy of the particles in an object. This is sometimes called thermal energy. The faster the particles move, the more heat energy the object has. (p. 141)

A student learning science and reading the sign, "thermal energy," for the first time in just this passage, is introduced to connexions between the signs "heat," "energy," "doing work," "particles," "motion/movement," and the new sign, "thermal energy." But there are in all likelihood no new language-games the student is being shown here; nothing is unfamiliar in this passage except for the way these signs are connected to one another, which is the grammar of the signs. And that is what the student reading this passage is being offered for their learning – i.e., for them, a new and expanded (and perhaps corrected) grammar weaving together various signs. Thus, contra Roth, our reading is that learning a new word in a science education class is *not* best pictured through accounts of changing old language-games and/or learning new language-games. A student learns how to use a new word by playing with it language-games already mastered, including language-games having to do with inquiry, assertion, stating causal relations, naming, explaining, doubting, etc. Further, when we are originally introduced to a language-game as a *novice*, it is not in the first instance a cognitive matter of 'grasping' a new thing, but, again, is rather a matter of being-shown-how-to-play-it which, at the same time, is a learning how to use (new) words. We learn how to use new words by actually playing various language-games with them, and, initially, at least, we learn how to play new language-games by being shown how to play them *with specific words*. Being-shown-

⁵ We wonder whether Roth means for us to consider his claim here in light of something like Wittgenstein's claim at OC §65: "When language-games change, then there is a change in concepts, and with the concepts the meanings of words change."

how-to-play a language-game has inherent to it a normative aspect or sensibility (following Ginsborg, 2011, for example), rather than a rational or syllogistic – or automatic – structure to the learning.

‘Productivity,’ explanation, and a science of learning

Roth’s paper has a central concern with ‘production’ and ‘scientific explanation’. This concern moves Roth’s argument from Wittgenstein’s ‘grammatical,’ or ‘conceptual,’ investigations, to the explanatory and the practical, and from these in the subsequent move to (pragmatic, concrete) *science*. Roth’s governing concern is in having a science of education, and thus his argument works around this interest: “A scientific discipline of education would want to rid its theoretical language of such terms [i.e., “meaning” and “understanding”]” (p. 28). We read this particular interest as shaping Roth’s heeding and use of Wittgenstein.

However, this evidently was not Wittgenstein’s aim, and while Wittgenstein’s anti-theoretical and anti-explanatory pronouncements concerning language have frustrated commentators, they are clearly enough made. Wittgenstein says this in many ways in many different passages. For example, in the ‘therapeutic’ section of the *Investigations* (i.e., PI §§89-133), he says that, “It was true to say that our considerations could not be scientific ones. ... And we may not advance any kind of theory. There must not be anything hypothetical in our considerations. We must do away with all *explanation*, and description alone must take its place” (PI §109). Near the end of the *Investigations*, he says that, “the question is not one of explaining a language-game by means of our experiences, but of noting a language-game” (PI §655; see also §654). Finally, “grammar,” Wittgenstein says, “only describes and in no way explains the use of signs” (PI §496).

Roth’s deferral to Marx on the centrality of ‘production’ seems key in understanding the kind of account advocated, and indeed, we think it helps open the way for Roth to introduce theory and explanation as aspects pertinent to the picture of language and meaning drawn by Wittgenstein. Roth says in this regard that, “Marx ... writes that the production of ideas, representations, and consciousness is directly tied into the production of material life and into the material relations of people, the language of real life. That is, the production of everyday life, language, and consciousness are irreducible” (p. 46). With this kind of impetus it is clearer to see how Roth is moved to say such things as: “Do we require “meaning” as a theoretical concept for describing and explaining what is happening here [i.e., in a bit of dialogue from the first excerpt]? ... The language-game played is about producing a description and an explanation of what happened when crayons were placed in the aquarium” (p. 34), and to be concerned with “the use of language in the production of life and societal relations” (p. 48). Finally in this regard, we mark Roth’s enthusiasm to “enact the real program Vygotskij described ... which aspires to explain individual and collective functioning of human beings ...” (p. 48). Despite his taking up of Vygotsky, we note that Roth in this paper tries to move beyond analysis in terms of complex, *mediating* activity between subject *and* object, to analysis focused on the complex activity *between* subjects.

Our unease with this developing argument is the move from a grammatical or conceptual perspective to a causal/hypothetical and practical perspective, i.e., from setting out a

conceptual framework *and on that basis* then setting out a theoretical framework. For instance, Roth says, “it [i.e., Roth’s own ‘pragmatist perspective’] changes the ways in which we describe knowing and learning; *and it changes the ways in which we have to consider and plan for learning experiences*” (p. 48; emphasis ours). From this perspective, Wittgenstein’s picture of the ‘language-game’ seems transformed and is turned to use as a theoretical term in a (new) explanatory theory concerning a pragmatism of learning (and thus “language-game” names – or denotes? – a hypothetical entity of some kind). Hunter (1985), on the other hand, provides the needed corrective here, encouraging a reading of Wittgenstein that disentangles the productive (i.e., causal accounts) from the ‘knowing-how’: “... we should not confuse the question *whether* a person can do something, with the question *how* it is that he can.” (p. 70)

Roth’s production-oriented account moves from description and grammatical investigation to doing scientific investigation, that is, to building a theory to account in causal terms for what we say, i.e., to explain how certain utterances are produced via the theoretical machinery of language-games. Perhaps by these means it is possible to abandon signs like “meaning” and “understanding,” but it is at the cost of slipping into what Wittgenstein calls a “fly-bottle” (e.g., see PI §309), viz., a philosophical trap in which one is beguiled and bewitched by the misuse of language (see PI §109). Needless to say, this is precisely the kind of course that Wittgenstein tries to discourage from even beginning. Further, we think the distance between Marx, even as filtered through Vygotsky, and Wittgenstein, is large enough to require very careful handling in reading Wittgenstein from a Marxist perspective.

Another way to consider the product – or the achievement – of a process as the main thing, is that in taking up this perspective we open our inquiry and talk both to protocols of strict measurement and assessment of that produced achievement and to *how* that achievement was produced (i.e., by looking to the causal surround of the utterance). When we focus instead on the process itself without regard for what it ‘produces,’ then, we think, we are closer to Wittgenstein’s picture. We consider rather the quality of the process, how the moments and moves that comprise it link together, their fecundity in making possible next moves; in other words, we consider *what* language-games are played and *how* they are played, and how these make for movement between signs. Perhaps we describe also the kinds of trainings and experiences and practices that make for the background circumstances to someone’s abilities to go on in these ways, which is not to provide a causal accounting, but rather to set out (when needed) the ‘grammatical circumstances’ of utterances made. There is an openness to process, and to its situation in a variety of circumstances and contexts, that make it difficult – *impossibly* difficult, given Wittgenstein’s picture – to render clear judgments as to products, outcomes, achievements. Rather, knowing how to go on, to continue going on with the talk, is what we have. “Have you got it?” is, in a sense, a *representationalist* way of picturing understanding; “Do you know how to go on from here?” is a way of picturing understanding in processual terms. In the first we assess a concrete outcome; in the second we assess a ‘knowing-how’ ability, i.e., an ability to take part in the flow of (more or less acceptable) talk and action and doing. For example, Wittgenstein says: “Conversation flows on ... and only in its course do words have meaning” (Z §§135); and that, “only in the stream of thought and life do words have meaning” (Z §173). “How well is the game

played?” might be our key question, taking our lead from Wittgenstein; for Roth, it seems, the key question is “What gets produced by playing this game?”

In making these points we seek to underscore that practice should be taken as constituting meaning, viz., that practice *is* meaning. This perspective contrasts with Roth’s comment that, “language not only is the result of praxis but also shapes praxis” (p. 45). However, we see Wittgenstein’s perspective being that language *is* [a] praxis (to use Roth’s terminology here). Roth goes on to say that, “society produces the activities of the individuals that constitute society. Behind word-use is hidden societal praxis, transformed and in it crystallized activity” (p. 45). Recall that there is nothing hidden for Wittgenstein, as Roth himself emphasizes (e.g., see pp. 30, 34). Thus we find something un-Wittgensteinian in this separation between language and praxis and this leaves us with open questions.

Where can we go from here?

Given the proceeding discussion our concluding provocation is to ask where we can go from here while still remaining attuned to Wittgenstein’s thought. As we have cautioned, we need to be careful making moves that proceed from the grammatical (i.e., the ‘conceptual’) and which move *on that basis* to the theoretical, the explanatory, and to the causally practicable. Wittgenstein has drawn a picture of language and meaning, giving us a way to talk about language, and from this we can frame our talk about learning, teaching, and pedagogy. Wittgenstein describes language, but does not develop causal/explanatory accounts of it, or explanatory accounts of why ‘utterance x means p.’ Following along with Wittgenstein in going ahead to consider ‘substantive’ disciplines like pedagogy – or geography, psychoanalysis, chemistry, etc. – leads us away from casually-oriented questions such as “how do we learn?”, which are usually followed out in the guise of empirical research, to questions more concerned with describing the signs we use and the ways we use them in these disciplines.

Further, what of the question of the determination of talk’s *content*, once we relinquish traditional content-bearing entities such as propositions or ‘thoughts’? In other words, how does process yield content? But are these even legitimate questions to pursue in following Wittgenstein, the latter question in particular seeming to be causal/productive in tone? If these are indeed questions that we can ask, then we feel that we need consider these kinds of questions with much care and hesitancy (e.g., see PI p. 232). Part of the motive in trying to ask these questions is to reject the notion of ‘independent’ content to which language must fit and our pedagogical thinking cohere.

If we concern ourselves with the application of a picture of language and meaning that is drawn on the thematic of what signs are used, with the connexions between signs, and with *how* signs are connected one to another, then we have a perspective from which to look upon a learner’s developing mastery of the use of signs. The empirical ‘how?’ of that developing mastery, or of how a learner (in their particular circumstances and situation) comes to connect and find familiar this sign with that sign is, in effect, a matter of different, and importantly, secondary interest to us at this point in our thinking. Here we are in agreement with Roth, who says, for example, that “science students have to have

many opportunities for engaging in language-games, doing and talking science” (p. 48). What does matter is that it is talking – i.e., the use of signs in the broad sense discussed by Wittgenstein in PI §2ff – that is the focus of our attention. How does one talk, how does one know how to go on with signs of interest, are the questions asking for descriptions that guide our investigations.

We also leave it as open here for further discussion how we can consider the difficulties in representing non-representationalist views of language. For example, Nigel Pleasants (1999) calls attention to the dangers of ‘performative contradiction,’ as it is broadly called, in just such attempts, i.e., in having to ‘perform’ what one is ruling out in order to rule it out in argument (see pp. 20-26). It is worth noting here how tricky it can be to think with/alongside Wittgenstein in ways that are consistent and commensurate with his perspective on language, but important to recognise as well that Wittgenstein inspires us to think in a diversity of ways.

Last, and as has been noted, there are many possibilities for continued dialogue here. Certainly, the issue of Roth’s employment of some of Vygotsky’s ideas (and, through Vygotsky, of certain Marxist themes) remains to be explored. There are as well different interpretations of Wittgenstein that can be taken up in conversation with Roth. As one example, consider how Per-Olof Wickman and Leif Östman (2002) analyze the learning of science students by using the notions of ‘standing fast’ and ‘immediacy,’ notions these authors derive from Wittgenstein’s idea of the standing fast of whatever it is that is bedrock in our language (e.g., see OC §§97, 99, 116, 125; PI §217). For Wickman & Östman, what stands fast for individual speakers (*qua* individual speakers) is revealed in those speakers’ unhesitating and unreflective verbal behavior in normal conversations or activity, and ‘normal’ as given by context. This is ‘immediacy,’ according to the authors, which can be picked out in learning discourse – as in any discourse – and contrasted with gaps in understanding (see pp. 605-606, 616-619). For our part, we find Wickman & Östman’s approach here interesting, opening up important and necessary conversations about Wittgenstein’s work. Among other things, we wonder about Wittgenstein’s notion of ‘standing fast,’ and the extent to which it can be removed from the context of Wittgenstein’s discussion of what is, in a more fundamental sense, bedrock in language, and applied to analyze the normal use of *all* signs. We advocate picturing language by taking up and considering the battery of notions that Wittgenstein put forth in various of the later texts, such as: ‘agreement in judgment,’ the ‘must’ (e.g., “the hardness of the logical must” RFM VI 49), ‘familiarity,’ ‘matter of course,’ and even the important notion of ‘going on (in the same way).’ We wonder as well whether the kind of thing being done with these notions of ‘immediacy’ or ‘the immediate’ is better captured in more processual descriptions of ‘knowing how.’ Finally, and as we argued above, we suggest that there are important conversations to be had in getting clear about Wittgenstein’s notions of ‘grammar’ and ‘language-games.’ All of this, however, points to further work to be done, and to aspects of potential dialogue with others in the relevant field.

To bring this response to a close, we want once more to thank Roth for his interesting, provocative, and welcoming paper. It offered us an opportunity to reflect on Wittgenstein and certain particular distinctions that we find important. We hope that these discussions are productive, generative, and helpful.

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