Theorizing with/out “Mediators”

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Abstract Mediation is one of the most often cited concepts in current cultural-historical theory literature, in which cultural actions and artifacts are often characterized as mediators standing between situational stimuli and behavioral responses. Most often presented as a means to overcome Cartesian dualism between subject and object, and between individual and society, some scholars have nonetheless raised criticism suggesting that such mediators are problematic for a dialectical psychology that takes a unit analysis (monist) approach. In fact, Spinoza develops a monist theory of mind and body that goes without and even excludes every form of mediation. In this study, we follow up on the latter criticisms and explore what we consider to be problematic uses of the notion of mediation as an analytical construct in the literature. We elaborate an empirically grounded discussion on the ways the concept of mediation may lead to dualistic readings; and we offer an alternative account where the notion of mediator is not needed. We conclude discussing prospects for and implications of a cultural-historical theory where the notion of mediation no longer is invoked to account for human action and development.

Keywords Mediation · Cultural-historical theory · Dualism · Speech field

The soul knows no mediators. (Mikhailov 2006, p. 36)

The denial of the concept of mediation itself resides at the foundation of Spinozian thought. (Negri 1991, p. 140)
In the scholarly literature that takes a cultural-historical perspective on human activity, mediation is a most pervasive concept. Thus, scholars in this tradition can find “versions of artifact mediation” in virtually all studies, “foreground[ing] artifact mediation as central to the process of developing psychological tools” (Cole et al. 2014, p. 275). Considered “a kind of methodological solution overcoming the dualism of the internal and external, the social and the individual” (Veresov 2016, p. 248), mediation is often invoked with regard to what some authors identify as “mediators of the mind,” which may include technological artifacts, social practices, the body, or the brain (Brinkmann 2011, p. 4). Such readings often are attributed to a Vygotskian perspective, where tool and sign mediation are seen as one of the psychologist’s most important contributions. In a close reading of Vygotsky’s work, however, F. T. Mikhailov, a philosopher-theorist of psychology, suggests—as shown in the first introductory quotation—that, from the perspective of the human soul—a term often used instead of “mind” or “psyche” in the translation of classical texts—there are no mediators. ¹

Another scholar, who has had access to Vygotsky’s personal notebooks, notes, and scientific journals comes to the same conclusion by stating that “the idea of the sign as the mediator between nature and culture was still used as a heuristically useful abstraction, but it gradually shifted to the background of the theory and was virtually replaced by other notions and ideas” (Zavershneva 2014, p. 74, emphasis added).

Mediation has been such an important theoretical concept that some scholars have noted “centuries of the triumph of bourgeois metaphysics of mediation” (Negri 1991, p. 141) to which Spinoza and Marx offer irreducible alternatives. Thus, there have been and continue to be scholars both disagreeing with the need of mediators and rejecting the pervasive presence of the concept. The latter has been referred as mediationism (Costall 2007); and there are warnings concerning the unproductive and narrow focus on (semiotic, cultural) mediation that dominates the literature (Arievitch and Stetsenko 2014). Others “believe the concept of mediation is by no means helpful to produce an integrative view in psychology,” partly because “the theoretical job of such concept is unclear” (Gaete and Cornejo 2012, p. 70). A problem is that, if tools, technology, and signs were indeed mediating every activity, mediation would explain nothing (Roth 2007). If the physical body is affected and shaped by cultural practices—for example the case of thalidomide babies, which are outcomes of pharmaceutical research, prescription practices, mothers’ demand for and use of a drug against morning sickness—then what additional information does a concept like cultural mediation add to the analyses?

There is evidence that Vygotsky himself was critical to a focus on mediators “to the detriment of the operations with [them]” (Vygotsky, in Zavershneva 2010a). In personal notes near the end of his life, he was critical of his earlier work to the point of denoting it as false because of its inherent dualism (e.g. between higher and lower functions) (Zavershneva 2010c). It was at that time that he turned to Spinoza, who, in confronting Cartesian dualism, does not make use of hypostasis or mediation (Negri 1991). For Spinoza, “being is transparent in its determination . . . in that it excludes every mediation that would produce the determination” (p. 128, emphasis added). Indeed, the philosopher’s rejection of mediation is not just latent in his work (Spinoza 2002), requiring to be exhibited by means of analysis. Instead, while discussing human

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¹ For example, in the Latin version De anima of Aristotle’s classical text Περὶ ψυχῆς [Peri psykhes].
relations and human society, he writes: “I do not believe that we can by mediation discover in this matter anything not yet tried and ascertained, which shall be consistent with experience and practice” (Spinoza 1883, p. 288). It is not surprising then that in Vygotsky’s “last, ‘Spinozan’ works the idea of semiotic mediation is supplanted by the concept of the intersubjective speech field” (Mikhailov 2006, p. 35, emphasis added). Moreover, reading Vygotsky’s notebook entries from this period, “one gets the impression that . . . the mechanisms of social mediation were not important to [Vygotsky], and . . . they did not represent the essence of man for [Vygotsky]” (Zavershneva 2010c, p. 70). American pragmatist philosophers, too, argue against the idea of mediation, emphasizing instead interconnectedness and unity of being and things (Dewey and Bentley 1949/1999). Rather than postulating an inner mind and an outer world—or a social practice and a developing individual—external to each other that then need to be connected by a mediator, there is a dynamic identity (unity) of intersubjectivity and intrasubjectivity that plays itself out as this speech field. This speech field has features that are simultaneously internal and external to the individual person.

This study offers a discussion of the notion of mediation and the associated idea of material artifacts as mediators in (professional, everyday) practice situations. We begin by presenting an episode that mainstream cultural-historical literature may identify as involving artifact mediation. We then draw on the episode as a means to ground our discussion of mediation and the alternative concept of speech field. In a constructive rather than absolutist spirit, we offer a nuanced elaboration of the possible pitfalls and alternative ways of thinking/doing research on human activities with and without mediation. Through our discussion, we show how characterizations of activity that focus on mediators all too easily retain the Cartesian dualism that mediation is supposed to overcome. We then present an alternative way of accounting for instances of human action involving artifacts that does not involve mediators, and which includes time and social relations as irreducible aspects of the unit of analysis. As a way of concluding, we find two possible paths: (a) either we theorize with mediation in a relational and transactional perspective, thereby reclaiming a theoretical term for the cultural-historical sciences from a non-dualist perspective (Stetsenko 2013; Veresov 2016) or (b) we do without mediation in the cultural-historical theorizing of human activity.

Tool and Sign in Debriefing

For the purpose of grounding our discussion, we offer the following case of aviation debriefing meetings that follow the initial certification and subsequent biannual examinations of aviation pilots. The purposes of a debriefing meeting include communicating assessment, analysis of weak and strong points of performance, and learning from the past experience in the flight simulator. The setting is particularly well suited for our discussion and critique in that debriefing meetings tend to include many cultural artifacts, which in common sociocultural parlance are said to be mediators of the learning and practice of (debriefing, aviation) activity. In the following, we focus on an exchange involving a quick reference handbook (QRH), which pilots have available...
in the cockpit for looking up checklists when required, such as during emergency situations.

The meeting fragment arose during the discussion of the events in the simulator that followed a problem while accelerating the aircraft for a takeoff, which led the pilot to reject the takeoff. The examiner said that he wanted to understand why the pilot had ordered an evacuation of the aircraft. Following the pilot’s comment that sometimes the best action is to get passengers off the aircraft, the examiner pulls the QRH, places it in front of the pilot, and points to the checklist to be used in the case of a rejected takeoff (turn 01). Their talk produced a description of what had happened (turns 03–06), which is followed by an evaluative term (turn 07). There is then a shift to the “items” (turn 07), followed by the pilot’s tracking of the second item of the procedure, “auto press[ure]” (Fig. 1), accompanied by the statement that it could be a problem (turns 08, 10). The exchange that follows accentuates the fact that the auto-[cabin-] pressure feature had not been actuated, which could entail problems opening the door (turns 11–14). As can be seen from the checklist for an emergency evacuation (Fig. 1), the evacuation itself is at the end of the list, following a number of other actions to be taken. (The shaded parts of the transcription correspond to the offprint images to their right.)

*Fragment 1*

01 E: ((pulls out quick reference handbook, places it on the table between himself and pilot)) So this is before we read this checklist and went through it.
02 P: yea, yea.
03 E: You
04 P: Evacuated.
05 E: Ordered the evacuation.
06 P: Yea, yea.

07 E: I fully acknowledge that you checked the engines were shut down, that’s primary okay. So that’s fine. So that is okay, but just what are the items that? ((points to first item on checklist))
08 P: Well this auto pressure could cause a problem ((follows first item of text from left to right)) but you could pop the cockpit on air.
09 E: Yea.
10 P: To depressurise the aircraft. So that is one that would certainly ((points to end of first item))=
11 E: =So it could be the aircraft
12 P: Would still possibly
13 E: It still might have some pressurisation?
14 P: Pressurisation, yea, yea, yep so that could be a problem for them opening the door, for sure.
15 E: Yea. All right.

In this fragment, the quick reference handbook available to the pilots during the flight comes to be placed between the pilot, who is to learn from the examination situation through critical reflection produced in the debriefing meeting, and the examiner. Here, the procedure that describes what should have happened is made present, but so is the very tool that should have been used during the flight simulation. Both
examiner and pilot orient themselves and the respective other to the QRH item currently at issue using pointing gestures. Here, the issue is the failure of the pilot to enact the auto-pressurization “dump” (Fig. 1).

From Mediation to Speech Field

Tools and Signs between People (and World)

In the episode the participants make reference to the quick reference handbook that is both a tool in the cockpit and, in the debriefing, a text used in the analysis of a past lived and witnessed event. The insertion of the cultural artifact in the situation becomes an occasion to make stand out for the pilot a crucial aspect of his prior performance for the purpose of learning for future performances. The research literature is replete with studies that characterize such events as having been “tool-mediated” or “sign-mediated.” Such studies tend to characterize the situation as a triadic relationship involving teacher-object-learner relation (Cole and Engeström 1993; Dupertuis and Moro 2016), where any of the elements may be seen as mediating between the others. Thus, studies might suggest that the artifact “mediates the account” being provided about some past event; it might even be said to “mediate between the pilot and his memory” of the past event, as some suggest (e.g., Middleton and Brown 2005). Such studies may employ diagrams of the type that Vygotsky (1989) used to express the relations between people (subject1 and subject2) when signs/tools are introduced to an activity. The sign comes to stand between the two subjects, as in

![Diagram](image)

and is said to mediate between the persons. In more recent literature, the sign is often said to “scaffold” one of the two involved, here the pilot into producing the account. Few of those studies, however, do provide accounts of the precise work that the concept of mediation is to do for the analysis and how mediation functions. The situation is not

Fig. 1 Typical format of a checklist of the type found in a QRH, here pertaining to an emergency evacuation on the ground. Procedures differ by aircraft type and airline, here following the ATR Quick Reference Handbook §1.02
unlike in the use of the concept of power, which is deployed to explain relations, rather than using relations to exhibit the emergence of power differentials, as some authors suggest (e.g., Foucault 1975).

Mediational accounts may employ diagrams of the kind that Cole and Engeström (1993) suggested. Cole and Engeström use three triangles where the vertices of each are populated by three of the four terms “adult,” “child,” “text,” and “world” to show mediation at work in learning to read, the third triangle mediating between (lying across) those two external to each other representing the child before and after instruction. In the present context, the representation equivalent to the Cole and Engeström approach would include the pilot, what has happened in the cockpit (world), the examiner, and the quick reference handbook (text) (Fig. 2a). This can be seen as a shorthand notation of the cultural-historical-activity-theoretic framework that the same authors present (Fig. 2b). Two mediational situations already exist (solid lines), one in which the examiner mediates the pilot’s access to the cockpit (world), the second in which the text already mediates the examiner’s access to what has happened in the cockpit (world). Just as the goal of instruction is to achieve a text-mediated relation between child and world, the purpose of the debriefing meeting would be to achieve a relation between pilot and world mediated by the text (quick reference handbook) (Fig. 2a).

In this situation, the mediators might be taken to be something external to the phenomenon under analysis. The term mediator then denotes a thing outside the thing itself (Mikhailov 2001). Even though some scholars, who actually are attending to the dialectical intentions of activity theory, emphasize that tools or objects cannot be considered outside of and independent of activity (Leont’ev 1978; Stetsenko 2010), studies appear to treat tools, objects, and even language as something external to the person rather than as something that can be understood only as part of a transactional relation where person and situation are in an irreducible, mutually transformative relation. Examples of such entities are tools and signs (language), treated as external mediators between the inner subjectivities of participants in talk. Mediated action is said to occur when “humans act on an object through the utilization of tools of various

![Fig. 2 a A classical approach to semiotic mediation, where the debriefing situation is mapped onto that of child-adult in Cole and Engeström (1993). b The mediational triangles situated in the cultural-historical activity theoretic approach](image)
kinds, such as material instruments, signs, language and mental models, and so on” (Prenkert 2010, p. 643). This may be expressed generally in the formalism

\[ S \rightarrow T \rightarrow O, \]

which replaces the \( S \rightarrow O \) relation that underlies classical psychological theories (e.g., \( S \rightarrow R \)) and their immediacy assumption. Because the tool stands between subject and object, it is said to mediate the action in question (Prenkert 2010).

The discussion may be extended by considering all the mediated relations existing within the version of cultural-historical activity theory that dominates in the West (Engeström 1987; Prenkert 2010). The notion of mediation Engeström develops in the form of a triangle builds, among others, upon Ogden and Richards’ (1923) interpretation of Peirce’s three-ness, a take that other pragmatists consider “crude” and introducing the dualism between mind and the physical world (Dewey and Bentley 1949/1999, p. 99). Engeström (1987), who also finds limitations in Ogden and Richard’s approach, expands the basic triangle into one representing activity, a category of thought and unit of analysis (Fig. 2b). Activity theorists hold that in every single case, any two moments of a given activity (e.g., subject, community, rules) cannot be understood unless some third “element” intervenes. Thus, for example, rules, cultural artifacts, and division of labor are said to intervene between subject and community (Fig. 2b). Instead of taking activity as the smallest unit to which society can be reduced, as a unit of analysis, Prenkert (2010), mirroring the communal practice, 2 decomposes it into elements: “elements ‘subject,’ ‘object,’ and ‘community’ [that] constitute the fundamental touchstones of human activity” (p. 654). To these are added “the elements ‘instruments,’ ‘rules,’ and ‘division of labor’ [that] are cultural artifacts mediating the relations between the core elements” (p. 655). As elements, however, these entities are external to each other and require mediation to hold together as a unit (Hegel 1807; Vygotsky 1987).

Though perhaps unintended, it is difficult to see how the characterizations above differ from other classical conceptions that do not adhere to the dialectical premises of a cultural-historical psychology (Veresov 2016). Indeed, the mediational triangle that serves as basis for most discussions of mediation may be seen as analog to the way mediation is conceptualized in current variable-oriented approaches, where the notion has currency independently of its cultural-historical tradition. In such approaches, mediation is invoked to “explain the relationship between an independent variable (predictor) and dependent variable (criterion) by way of a third, explanatory variable, which is called the mediator” (von Eye et al. 2009, p. 228–229). This is in line with classical psychological theories, where mutually excluding oppositions reign, including that of self and other, body and mind, individual and collective, and subjectivity and intersubjectivity. A mediator is then required to explain how inner, subjective motivation is connected to, and operates on, the outer physical world. Such an approach, however, is incompatible with a psychological theory that aims to substitute a unit

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2 The website of the Center of Activity Theory and Developmental Work Research refers to the parts as “elements” (http://www.edu.helsinki.fi/activity/pages/chatanddwr/activitysystem/).
analysis approach for the traditional analysis by elements (e.g. Vygotsky 1987).
Whereas analysis by elements is based in “the decomposition of the complex mental
whole into its elements [variables]” (p. 35), unit analysis “designates a product of
analysis that possesses all the basic characteristics of the whole” (p. 46).

Mediation is required whenever theorizing begins with opposing (mutually exclud-
ing)—explicitly or often implicitly (Costall 2007)—entities that then need to be joined
up in some way (Ilyenkov 1977). Considering the debriefing episode described above,
we may take such an approach and argue that the QRH is mediating the relationship
between the (examiner, examined) pilots. To identify the QRH as a mediator, the
subjectivities of pilot and examiner must be assumed to pre-exist the relation, and the
tool be place in between. It also functions to “mediate” between the different
(subjective) “meanings” and as a tool in the “construction of” intersubjectivity.
Alternatively, however, and in line with a unit analysis, it is possible to consider the
QRH to be an aspect integral to the field in which the two participants are also
constitutive parts. The QRH then is integral part of the common ground in and to the
sequentially organized turn taking of examiner and pilot. Such is the approach we work
wards in the sections below.

Tools and Signs as Irreducible Parts of a Unitary Moving Whole

If activity is taken as a true unit [edinitsa], then no part can be understood on
its own (Leont’ev 1978). There is a transactional, that is, mutually constitutive part–
whole relation. This means that each part is implicated in all other parts, “a single
process of their mutual generation and mutual determination” (Mikhailov 2001, p. 21).
Whereas in interaction, “thing is balanced in causal interconnection,” transaction goes
“without final attribution to ‘elements’ or other presumptively detachable or independ-
ent ‘entities,’ ‘essences,’ or ‘realities,’ and without isolation of presumptively detach-
able ‘relations’ from such detachable elements’” (Dewey and Bentley 1949/1999, p.
133). In the research literature, however, examples abound where mediation and
mediators are defined as independent entities—e.g., in “mediation concerns the use
of artifacts, people or signs to accomplish goals, e.g., using a calculator to perform a
calculation” (Carlsen et al. 2016, p. 3). There is no indication that the addition of a
calculator changes not only the entire unit of analysis but also its parts. Thus, the
“people,” parts of the respective units, are not the same when a calculator versus pencil
and paper. As recent studies in the context of aviation show, when the artifacts are
changed (e.g. a cockpit with traditional and electronic displays, everything else being
the same), then the whole activity changes and with it the quality of the performance of
pilots moving from one to the other (Roth et al. 2015; Soo et al. 2016). These studies
suggest that there are two very different units of analysis. Mediation studies, instead,
continue to theorize the artifact, tool, or sign as a conduit “to impart some force or
energy to the business at hand: this is the content of mediation” (Hasan 2005, p. 138).

In the transactional approach, no part of an activity can stand between two other parts
of the same activity because it is already within those parts (Ilyenkov 1977). A transac-
tional relation means that the tools, objects, and language in the performance situation
can be understood only through person characteristics, and the person can be understood only
through specification of the situation (Vygotsky 1994)—a position that leaves no space
for another entity in between. Does an analysis that examines each of the mediated
relations between the parts bring back the unity that holds the system together? Or does such unity become irrecoverable as soon as it is reduced to elements? From a transactional perspective the intermediary status of the tool is the result of a particular way of theorizing, which takes apart a “single undivided situation” constituted by “means-consequences” (Dewey 1929, p. 397). Primary experiences including tool-use are wholes, which become relations of people and things as a result of critical analysis. The tool or sign is not between subject and object, because “sign itself is a transaction” and “its locus is the organism and the environment, inclusive of connecting air, electrical and light-wave processes, taken all together” (Dewey and Bentley 1949/1999, p. 146).

There is of course a linguistic difficulty in dealing with mediation and the forms of talking that it allows. Cultural-historical activity theory recognizes two planes of activity, one material the other ideal in nature (Leont’ev 1978). Whereas for Leont’ev there is only one activity, his description opens up the possibility to think the two planes as being of a different order, leading to a parallelism of practical activity and consciousness. As a consequence, many present-day researchers apparently take them as parallel planes of different order, one material and the other ideal—a point that already was critiqued in the 1930s (Vygotsky 1997). In this form, mediation becomes a hidden form of Cartesian dualism that reappears in modern version of cultural-historical activity theory. Not surprisingly, using that line of inquiry it has been suggested that there is a dialectical relation between material and psychological structures (Roth 2007). But if structures are thought as different orders held together by a mediator, and despite the addition of the word “dialectic,” the resulting theory still is dualist (Vygotsky 1999). In line with this problematic, it has been suggested that the focus tends to be on mediated activity—as depicted in the triangle of activity—instead of on the mediating activity that was the focus for Vygotsky, and which emphasizes its developing, dynamic nature (Veresov 2016). The difference has to do with the exclusion of the unfolding of time (movement, change) in the former model (time is not represented in the mediational triangles), whereas a unit analysis approach requires capturing the changing nature of human activity (Roth 2010). Once time is included in the minimal unit, there are not two opposed entities but an unfolding whole that manifests in different forms, including as subject and as object (Roth and Jornet 2017). In other words, the mediational perspective emphasizes the transitive dimensions between artifacts, tools, signs, and human agents (as depicted in the mediational triangles). On the other hand, the position without mediation focuses on the intransitive relation of continued co-becoming of all parts of a unit—i.e. artifacts, tools, signs, and human agents (see the analogy of the intertwining fibers below).

The Word, Impossible for One, is a Reality for Two People

Mediation often is invoked to explain the role of signs (words) in human relations—not surprising when we consider that one of Vygotsky’s (1989) own diagrams situates the sign at the apex of a triangle the base of which is formed by two human subjects (see above). In such takes, words are assumed to mediate between (intra-) subjectivities such that one may influence the actions or ideas of another. As a consequence, each intrasubjectivity initially is for itself and, therefore, external to another person. This then requires the insertion of a social environment that mediates between the two to allow for intersubjectivity. Associated with this position are statements about signs
(e.g., words) as mediating between the physical and the social worlds, such as when a
sign is described in terms of a “mediator” that functions as “an element of interaction
between the subject person and the object person” (Yamamoto 2012, p. 426). As a way
to problematize this we may consider the following excerpt from Fragment 1.

Excerpt (Fragment 1)

07 E: But just what are the items that...?
08 P: Well this auto pressure could cause a problem

In such situations, one might be tempted to think of the examiner and the pilot as
independent elements of the interaction, which therefore require mediation between
the participants and their private “meanings.” That is, such approaches start with
intrasubjectivity and make intersubjectivity a problem. The specter of dualism is
present, manifesting itself in theorizing conversation from the perspective of two
intrasubjectivities in the process of “constructing” intersubjectivity. How, one might
have to ask, can completely separate individuals construct something together if they
do not already have a lot in common on which such a joint construction is premised?

In the consideration to theorize activity without treating language as a mediator, we
begin with the statement that the word is impossible for one individual but is a reality
for two, as Vygotsky (1987) notes referring to the philosopher of “community” L.
Feuerbach (1846). He thereby takes a decidedly different position by denouncing the
relation made between word and denoted thing (e.g., meaning):

Language is not the relation between a sound and the denoted thing. It is the
relation between the speaker and the listener, the relation between people directed
toward an object, it is an interpsychic reaction that establishes the unity of two
organisms in the same orientation toward an object. (Vygotsky, in Zaershneva
2010a, p. 25, emphasis added)

Returning to the debriefing episode described above, the QRH is precisely such an
object that allows an interpsychic reaction that establishes the unity of the examiner and
pilot in their orientation toward establishing an understanding and explanation of the
pilot’s earlier performance problem. It does not “mediate” their intercourse but, as “all
objects of culture,” “ha[s] performed the means of intercourse” (Mikhailov 1980, p.
195). In other words, the QRH does not mediate the intercourse: it is the material form
of the intercourse. As a result, “language is a branch like all the other branches that
provide for and sustain human intercourse . . . growing from the same root and trunk,
not severed from them” (p. 195).

In any practical conversation such as the debriefing talk above, the word therefore
does not stand between two individuals. Instead, the word is “owned” by and common to
them (as in the expanded excerpt). It is one of the manifestations of the communicative
field that constitutes and defines the forms of possible relations. That communicative
field—variously referred to as semantic field [semantičeskoe pole] (El’konin 2008) or
sense-giving field [smyslovoe pole] (El’konin 1994)—has changed because something
in the visible environment writ large has been changed through accentuation. In that
field, the QRH is a supportive artifact in which the relation exists. It no longer makes
sense to talk about words as standing between humans or between humans and nature. That the word is a reality for two can be seen when we use a fuller transcription that contains not only indications as to what is said but also to what is heard:

**Expanded excerpt (Fragment 1)**

<table>
<thead>
<tr>
<th>Time</th>
<th>Actor</th>
<th>Action</th>
<th>Utterance</th>
</tr>
</thead>
<tbody>
<tr>
<td>07</td>
<td>E</td>
<td>says</td>
<td>((says)) But just what are the items that . . .?</td>
</tr>
<tr>
<td>08</td>
<td>P</td>
<td>hears</td>
<td>((hears)) But just what are the items that . . .?</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>says</td>
<td>((says)) Well this auto pressure could cause a problem</td>
</tr>
</tbody>
</table>

This transcription makes salient that the utterance “But just what are the items that . . .” belongs to both participants, existing in the vibrations of the vocal cords for one and in the vibrations of the eardrum for the other. Unless the word exists for two (or more) participants, it does not exist at all (Vygotsky 1987), especially when considered in terms of the internal dynamic of the situation. In the word that is common to both, a social unity/identity exists—even when different “meanings” exist for the participants, where the dialectical “identity of opposites” (Ilyenkov 1982, p. 271; Mikhailov 1980, p. 112) is rendered especially evident. We understand this to be the sense of Dewey’s *transaction*, which means that the participants cannot be separated into individual interacting elements without a loss of the situation as a whole. This is so because, in the example above, the first turn is a query because there is an reply, and the second part is a reply because there has been a query. The nature of the two actions cannot be identified without considering the relation as a whole (Bakhtin 1984). The *social* phenomenon, {query | reply}, implies co-understanding, a unit of intra-intersubjectivity. If the word is common, if in it E and P exist, if it is the knot that joins E and P, then the two cannot be thought as independent elements. The word no longer *stands between* but actually is common to them and manifests their unity in every *this* practical debriefing activity. It is because they already have a common practical sense of how the world works that the word marks something in common. If this is so, we may as well follow others (including Mikhailov, Dewey, and Wittgenstein) and abandon the use of mediation for describing the relation of subject and object. We can then “treat the talking and talk-products . . . as the men themselves in action, not as some third type of entity to be inserted between the men and the things they deal with” (Dewey and Bentley 1949/1999, p. 100, emphasis added). In other words, turning away from mediators as means to connect between otherwise severed attributes allows us to pursue analyses in which beings and the way they are come to be de-emphasized and continuous change and becoming are made salient, focusing on the irreducible developmental dynamics instead of on self-contained mediating parts. In the following section, we revisit our exemplary case to explore how such a way of theorizing may be performed.

**Theorizing without “Mediators”**

You see, there is nothing outside us that is not simultaneously within us, and in the way the outer world has its colors, it also has the eye. (J. W. von Goethe, in Eckermann 1836, p. 331)
In the aphorism opening this section, the German poet, writer, and philosopher Goethe states the unity and identity of what is inside and outside human beings. A critic of the mediational approach—who also suggests that the later Vygotsky has radically changed—proposes to rephrase this quotation to read, “There is nothing other for us from the outset that would not be our own” (Mikhailov 2001, p. 20). Some readers may agree with the reviewer who in the review process pointed out that Goethe’s statement is false. However, Goethe’s is the very position that Vygotsky took when grounding his theory in the cultural-historical analysis of the emergence of the ideal and the general and the ideal (e.g. exchange-value of a commodity, “meaning” of a word), which are social/societal relations and corresponding relations between things that are projected in the praxis of relations onto one of the things (Ilyenkov 2012; Mamardašvili 1986; Marx and Engels 1962). Goethe’s statement expresses the same insight that we ought not dichotomize the inside and the outside because of their fundamental unity. This position also is taken in American pragmatism, where “Existence has organism and environment as its aspects, [but] cannot be identified with either as an independent isolate” (Dewey and Bentley 1949/1999, p. 193). There are therefore no mediators required to bring the inner (self) and outer (other) together because the cultural means—tool, artifact, sign—are standing between entities only if these are external to each other: there then is an opposition between them, for example, between inner and outer bridged in processes of internalization. Pragmatists critique “the tendency to assume a pure intermediary between a propositional sign [Satzzeichen] and the facts” (Wittgenstein 1953/1997, p. 44, original emphasis); they therefore do without mediation. Thus, “however many steps I insert between the thought and its application, each intermediate step always follows the previous one without any intermediate link, and so too the application follows the last intermediate step” (Wittgenstein 1974, p. 25). The philosopher concludes, “we can’t cross the bridge to the execution (of an order) until we are there” (p. 25). In the following, we exemplify how the debriefing episode can be accounted for without drawing on the notion of mediation.

We begin by noting that the quick reference handbook (QRH) contents can have a function only when it is already an inner aspect of examiner and pilot. The QRH is an integral part of the work world they have in common. This world is in common not because of some interpretation but because examiner and pilot have a common sense of how the cockpit world works and the function of the QRH therein. For the QRH to have any transactional import, the checklist must already be an aspect of experience, the reality of sense and affect within each of us (Mikhailov 2001). Following the checklist articulated in the QRH is possible only because it already is integral to the communicative event, because it is already integral to the experience of all. The transactional relevance of the QRH is conditioned on the actual practices, some aspects of which it describes. The placement of the QRH, the opening at the appropriate page, and the pointing to the checklist, change the accented visible of the meeting.

Readers may have noted while reading the fragment that the QRH, from a classical account, not only functions as a tool but also that it is itself the target of (deictic) sign when the examiner moves his hand in its direction to ask for an account of that event during the examination. The classical approach determines the “pointing finger” as an indexical sign, and the QRH as its referent—an analysis that nonetheless misrepresents Peirce’s “basic envisionment” on how sign and world relate (Dewey and Bentley 1949/1999, p. 99). The finger movement in fact becomes an instance of pointing only
because there is something that can be found as a possible referent motivating the pointing: the thing (the second line in the procedures, Fig. 1) makes salient the finger as much as the finger makes salient the second line. Paraphrasing Goethe cited above, we might say that the thing and the finger are in the world (outside), just as much as are the pointing (intention) and the perceiving (inside). Instead of a finished sign (finger) pointing to a finished thing in the world (QRH), there therefore is a double-sided relation—which thus explodes the common approach of the sign as some third thing standing between subject and object; it explodes the original triangular structure upon which other developments have been premised. This is so because the relevance of this pointing is motivated by the thing, all the while being dependent on the recipient to identify the thing that the finger possibly points to. The existence of a thing that can be pointed to allows treating the finger as an instance of deixis.

Prior to the examiner’s hand movement towards the QRH, the latter was there among other pieces of paper and objects (see Fragment 1, turn 01). Similarly, prior to the examiner’s repeated invitations to attend to the QRH, it was but part of the furniture of the room, as much attended to as other pieces that furnish the debriefing room. As soon as the QRH contents are accented by some reference (deictic, body orientation, verbal indication), the semantic, sense-giving field changes. The presence of the text no longer requires to be said because it goes without saying, being part of the co-inhabited space generally and the semiotically marked space specifically. This is also what makes it so difficult for non-initiates to understand what the pilots are saying even though most of the time they use words that are part of the common core of English: much of what they say is said, so to speak, in abbreviated form because it already forms part of their ways of being professional pilots.

We may consider that which becomes an accentuated and accented visible in the same way in which we would consider another speaker—not as third party and mediator standing between the other participants but as another participant. We may grasp this way of thinking about the situation if we draw an analogy to the courts of law, where the attorney or lawyer asks for a witness—here the debriefing tool. This witness, in many cases, cannot tell just any story but is required to produce an account of what has happened in terms of and within a given structure. When, for example, the examiner and pilot following Fragment 1 watch a video of the simulator performance, the latter functions in the way a witness functions, providing a particular account through the lens of the camera mounted in the simulator. In the same way, the placement of the QRH between examiner and pilot functioned as if there had been an instruction: “You have to tell what happened in the simulator in terms of the QRH items.” In this situation, too, we would have talked about the active alteration of the speech field produced when someone else enters into an ongoing verbal exchange. This type of approach already exists in integrative psychology, for example, in actor-network theory (e.g., Kono 2014). A challenge in such approaches, however, remains as to how to overcome the difficulties that stem from postulating a set of interconnected, yet self-contained nodes involves. Conceptualizing activities not as set of interconnected points, but as “an interweaving of lines”—in the way we do below—has been proposed as a possible solution (Ingold 2013, p. 64).

A situation such as a pilot and examiner talking in the absence and presence of QRH can be represented in terms of two and three lines of development, fibers that form a rope (cf. Varenne and McDermott 1998). Each line, like a strand of wool, consists of a
bundle of enmeshed lines, some of which may stick out as if seeking to enmesh with further lines (Fig. 3a). The piece of paper on which the QRH diagram is imprinted consists of enmeshed cellulose fibers to which ink molecules have been joined (until, in decay, the lines of fibers and ink separate again). Perhaps better than the strand of wool, which already contains the memory of the hands of the spinner, are the developing branches of a kiwi vine, that come together, embrace, only to separate again (Fig. 3b) in the way that the pilots and the QRH come to separate once the debriefing meeting is over. But, as seen in the case of the kiwi vine, the shapes of the developing branches (lines) are forming in the encounter, each branch (line of development) bearing memory of it. The coming together of the examiner, pilot, and the QRH diagram can then be viewed as bundles of strands, tied, if at all, by some of the strands as in the configuration of the edge of a pillow (Fig. 3c). None of these lines is “mediated” by other lines, but the resulting bundles, are mutually implicated in each other’s development. All lines involved in a particular phenomenon together constitute a field of developmental lines.

Rather than focusing on the back and forth between speakers (or maker and material) and their institutional or social contexts, the lines both constitute and are constituted by the field of the ensemble (Fig. 3), which also and at the same time constitutes not a text, but a context. Thus, while talking about events, responding to one another, the participants in a debriefing meeting change even if they do not intend such change. In producing what the current activity is designed to

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Fig. 3  
**a** A wool strand is made of many intertwining fibers, themselves made up of intertwining molecules and atoms. **b** Living lines of development, such as these kiwi vines, intertwine only to grow apart again, their shapes constituting a memory of the encounter. **c** Many strands form complex patterns, as in this edge of a pillowcase (© Wolff-Michael Roth, used with permission)
produce, humans produce themselves (Marx and Engels 1978). In this approach, lines of development mutually implicate one another, each taking on aspects of the other. When higher psychological function and personality are investigated, their genetic origin can be traced back to relations with others (Vygotsky 1989). If something new is introduced, such as a globe or a phrase, the unfolding conversation changes in content and dynamic. This introduces a new line of development for the artifact (here, QRH), which is modeled by the introduction of new fibers (Fig. 3a), branches (Fig. 3b), or bundles of thread (Fig. 3c). A new field is created, and new structures are (made) perceptually available. In this field, lines of development are shaped, here, the one representing the pilot. Some time later, the patterns in the line of development exhibit strong resemblance to those that were made salient in and through the artifact even when it no longer is there. Here, the genetic origin of flying an aircraft and of accounting for the flying event lies in a real social relation that also includes an artifact. Perhaps later, when the pilot again has to do an emergency evacuation, he may be seen acting in ways deemed consistent with the procedure stated in the QRH.

For a Differentiated Approach to Mediation in Cultural-Historical Theorizing

In this study we make and support the proposal to take a more nuanced position with respect to the use of mediation in general, and of the associated focus on mediators in particular, in the cultural-historical sciences. We do know that some of the scholars cited throughout this article continue using the term intending its dialectical (non-dualist) function. The difficulties become visible, however, when authors themselves need to repair their uses to clarify their non-dualist premises, such as when, after stating that practices are crystalized into artifacts, authors need to argue that such crystallization “does not mean that these entities become separated from activities in any ontological sense” (Stetsenko 2010, p. 10). The term is very much used even though for Vygotsky himself, “semiotic mediation . . . underwent significant changes and receded to the background of the theory” (Zavershneva 2010a, p. 27), being “virtually replaced by other notions and ideas” (Zavershneva 2014, p. 74). Given the review and critique exposed here, we propose one of two viable ways for proceeding:

a. Mediation is used judiciously, that is, only in the sense of a transactional approach, where systems are described “without final attribution to ‘elements’ or other presumptively detachable or independent ‘entities,’ ‘essences,’ or ‘realities,’ and without isolation of presumptively detachable ‘relations’ from such detachable ‘elements’” (Dewey and Bentley 1949/1999, p. 133)—a way that is consistent with the relational approach that reclaims the territory within a non-dialectical transformative stance to cultural-historical studies (Stetsenko 2013); or

b. Mediation, in its sense of postulating the central role of mediators in our accounts of human activity and development, is excluded from the theoretical repertoire because, all too often, even “the socio-cultural avant-garde keep backing themselves into . . . theoretical corners” (Costall 2007, p. 118).
We began this study noting that the concept of mediation has a long history in philosophy and has ascended to an almost hegemonic position in bourgeois metaphysics and idealism. We then exhibit (a) problems with using the concept and (b) that the concept may not be at all required. To keep the dialogue open, we nevertheless allow for its judicious, positive and substantial use. However, in so doing, the problems fail to disappear and remain unsolved. This is so because when “mediation” is used in this way, “as a necessary process of the making of meanings and values, in the necessary form of the general social process of signification and communication, it is really only a hindrance to describe it as ‘mediation’ at all” (Williams 1977, p. 100, emphasis added).

There is therefore some appeal to the second option because the discourse of mediation and mediating links all too easily allow thinking objective reality and consciousness as two independent things (elements) that are somehow joined by means of a mediator; making cultural-historical theory all too close to what Marxist scholars refer to as a vulgar materialism, that is, one that reifies dualism. In this study, we show how language and signification are indissolubly tied into the material production of social life (a fragment from a debriefing meeting), where language is consciousness for others as for the self. In this case, language no longer is nor has to be theorized as, a mediator (Williams 1977). Indeed, it is the very positing of a mediator as intermediary that introduces dichotomies and inescapable counterpositions, between human subjectivity and objective nature, between speaking about reality and reality itself (Mikhailov 2004; Williams 1977). We then begin theorizing real material social processes in which language and human relations are just as material-sensible as other things and interwoven with them (Mikhailov 1980; Williams 1977); and it is as result of their sensible nature that they also obtain suprasensible functions (Marx and Engels 1962). At that point, common labor is the proper phenomenon sui generis and objective reality and consciousness are two, different and contradictory manifestations of that one thing—human life. This position, therefore, allows us to focus on the dynamic of labor, specifically its transformative dimensions (Stetsenko 2010), and the continuous becoming of life without actually taking recourse to mediators.

Further appeal to the second option stems from the fact that Vygotsky himself may have been indicating such a step in the development of his cultural-historical theory. Thus, in his final days, Vygotsky, recognizing the “deficiencies in” and “untenability of [his] theory” was turning to Spinoza in the attempt to overcome psychophysical dualism (Vygotsky, in Zavershneva 2010b, p. 54). This turn enabled him “to complete an extremely important step away from his initial logical-methodological mediating intentions to a more consistent pursuit of the idea of the fundamental identity of the two allegedly polar . . . forms of human life” (Mikhailov 2001, p. 16). We point out above that philosophers in the Spinozian tradition have argued against the usefulness of the concept of mediation. With respect to psychology generally, and cultural-historical psychology specifically, Mikhailov (2001, 2004, 2006) elaborates on the problematic nature of the concept of mediation, suggesting that for the late Vygotsky, the sign no longer functioned as a mediator between subject and object. According to the author, Vygotsky was convinced “that the sign and the tool—as seemingly external (alien) stimuli of sense-bearing emotions (affects)—should be understood as internal (one’s own) means for willful and thus purposeful transformation of the motives of voluntary behavior (action) and behavior” (Mikhailov 2001, p. 17). As a consequence, the sign is
“but an internal (already completely one’s own) prop of the will, i.e., the subjective reality of an inner voice, born of its externalization for the Other, and thus also for oneself as for the Other within oneself” (p. 17). This involves not a three-term relation, where there is a subject, another subject, and a sign that mediates between the two, but an *intra-intersubjectivity*, where two people become part of a single social, thoroughly ideal and material phenomenon.

The idea of intra-intersubjectivity is captured in the final paragraphs of *Thinking and Speech* (Vygotsky 1987), written toward the end of the psychologist’s life when he characterizes the problem of consciousness as more important than the problem of thinking. Thus, he writes, “language is consciousness that exists in practice for other people and therefore for myself” (p. 285), which constitutes in fact a quotation (Marx and Engels 1978, p. 30) unacknowledged in the translation but present in the original text (Vygotskij 1934). The phrase does not suggest that language mediates consciousness but affirmatively states that language *is* consciousness, for the other as much as for the self.

The problem with the theoretical term (consciousness) lies in the fact that “it is virtually impossible to sustain the metaphor of ‘mediation’ (Vermittlung) without some sense of separate and pre-existing areas or orders of reality, between which the mediating process occurs whether independently or as determined by their prior natures” (Williams 1977, p. 99). In this study, we follow the lead of some cultural-historical and pragmatist philosophers to develop the (perhaps unfashionable) position that psychological theorizing not only can do without mediators but also, in so doing, may move a good way to eliminate the specters of dualism that continue to plague the field. Rather than focusing on how two points on opposite sides of the river come to be joined by some bridging artifact, we follow the flow and the sheaf of intertwined lines of development. Once such lines have separated, traces of their relation may be found in the subsequent individual lines. This phenomenon is observed when craftspeople or designers work with materials, in the course of multiple encounters, alters the developmental line of the craftsman. In such cases, materials do not stand between designers and the world, but lines of development emerge where bodily orientations, affects, and material configurations of the workspace mutually configure each other (Jornet and Steier 2015), none of them being distinguishable as mediator. In the physical sciences, an analogy would be that of two (heavenly) bodies together constitute a gravitational field that determines the movements of both. As a result, the bodies, the force field, and the movements of the bodies no longer are independent. As soon as another body is added to the system, the movements of all three will be altered in response to the new field brought about their material presence. When celestial bodies come close to each other, the gravitational field created in the encounter affects them all. Once they have separated, they no longer influence each other. However, their flight path has substantially been affected in and by the encounter in the field; the flight path is a form of memory of the encounter.

Analyzing human labor and development without recourse to the notion of mediators allows to focus on and understand the intransitive “once-occurrent Being-as-event” (Bakhtin 1993, p. 2). Proponents of the first suggested option (i.e., judicious use of mediation), however, may argue that the analytical distinction between subject and object is important and needs to be preserved, although admittedly conceding that subject and object must not be “understood as something given, unchangeable, or causally privileged” (Miettinen 2009, p. 270). A concern may be that, in getting along
without mediators the transformational agency and central role of tools that makes humans unique may be lost (e.g., Engeström et al. 2014). But taking the second position leads us to a different understanding of subjectivity, one that is closer and even identical to both Marxian and Ubuntu philosophy, both of which express the Spinozian recognition of the fundamental unity that characterizes human nature, a unity that the concept mediation does not help understanding (Spinoza 1883). The Marxian position recognizes that it is only through the relation to another human being (Paul) that a human (Peter) relates to her/himself as human (Marx and Engels 1962), which is the case Vygotsky (1989) uses to exemplify individual development. Here, it is not that Paul mediates Peter’s relation to himself but instead that cultural-historically, the relation was at the origin of Paul and Peter, that is, the distinction between inside and outside, between Self and Other is possible only as a result of their relation. The essence of Ubuntu is captured in the African proverb “A person is a person through other people” (Flippin 2012). In both Marxian and Ubuntu philosophy, intrasubjectivity no longer is in itself, but becomes what it is through the other and intersubjectivity. That is, we are because we are social beings. Indeed, as social beings in a social world we are not stable but continuously becoming. It is in precisely this sense, in the fact that we can only become one-self through an-other, that the term mediation may have currency in a non-dualist cultural-historical theory.

Once we begin theorizing growth and development in terms of lines of becoming (and unbecoming), we do not need to start from a division between subjects and objects because it is precisely in their joining together that we find the developmental phenomena of interest to cultural-historical psychology. The processes of growth we are interested in are thus not reduced to the interlacing of plants’ branches (Fig. 3b)—which here was used as a metaphor—but most centrally involve human development. Unlike the branches of a kiwi vine, the history of humans’ engagement with things and with each other involves the productions of accounts, where what has been done before may be made present again in a multitude of modes, including those made possible by the fact of language. From the alternative advanced here, the challenge is to describe those different modes rather than making them all appear to be instances of the same principle of mediation. Although challenging, examples of such analyses already exist: (a) in an analysis that provides a dynamic perspective on people, materials, and movement in elementary school mathematics classroom, using the metaphor of growing-making of mathematics (Roth 2016); and (b) in an analysis of designers and clients codesigning furniture, which focuses on the correspondence between people, materials, and created artifacts that arises from intertwining streams of life (Roth et al. 2016). By approaching human affairs as unitary developmental phenomena and not as the aggregation or interaction of elements (subjects, objects, rules, tools), we may be better positioned to describe those uniquely human practices, in the terms of what make them endogenously the unique practices that they are, and not the other way around. This means taking Vygotsky’s lessons on mediation, and the psychologist’s later Spinozist turn, as the beginning rather than as the end of each of our inquiries into human activities.

Compliance with Ethical Standards Neither author has a conflict of interest. The case study materials were collected under an ethics protocol of Griffith University and are in accordance with the 1964 Helsinki declaration and its later amendments or comparable ethical standards; informed consent was obtained from the participating individuals. T. Mavin assisted in data collection.
References


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