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Invited Article: The Bright Triad and Five Propositions: Toward a Vygotskian Framework for Deaf Pedagogy and Research

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L. S. Vygotsky's contributions to social research shifted paradigms by constructing now-foundational theories of teaching, learning, language, and their educational interactions. This article contextualizes a nearly forgotten, century-old research corpus, *The Fundamentals of Defectology.* Drawing on *Defectology*, two dialectic arguments are developed, which synthesize Vygotsky's corpus, then juxtaposed it against contemporary theories and evidence. The first describes three principles of Vygotsky's framework for deaf pedagogy: positive differentiation, creative adaptation, and dynamic development. The second posits five propositions about deaf development: the biosocial proposition, the sensory delimitation-and-consciousness proposition, the adapted tools proposition, the multimodal proposition, and the conflict proposition. By leveraging Vygotsky's optimism in response to the absorbing and difficult challenges of experimental, methodological, and theoretical research about deafness, including the psychology of disability and special methods of pedagogy, both arguments constitute a future-oriented call to action for researchers and pedagogues working in deaf education today.

Keywords: deaf education, deaf epistemologies and ontologies, deaf research methodology, deaf pedagogy, Vygotskian theory

Vygotskian Deaf Education

Which environments are appropriate for deaf children's sociocultural and intellectual development? Are deaf children developmentally disabled or developing along a different axis? Is quantitative deaf research essentially normative, and thus pathologically oriented toward its subject? How is deaf learning a holistic biosocial process of development? What modalities offer the greatest utility for deaf epistemological development? What methodologies—in teaching and research—are needed to answer these lines of inquiry?

These questions appear to be lifted from contemporary debates about deaf education and reflect ongoing research about it. They capture the spirit of our journals, conferences, and classrooms. They tackle difficult ideas and vigorously engage with conflicting concepts, namely, normal vs. abnormal, disorder vs. divergent order,

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and hearing loss vs. deaf gain (Bauman & Murray, 2014). Yet for all of their currency, these questions are nearly 100 years old.

L. S. Vygotsky (1896–1934) is, without exaggeration, one of the most significant theorists in social research. His theories on learning and teaching and their interactions are fundamental. They include *the zone of proximal development (ZPD), sociocultural tools,* and *scaffolding*. In the West, Vygotsky's scholarly influence was ascendant through the turn of the millennium. Enthusiasm centered on *Thought and Language* (1962) and *Mind in Society* (1978). Each references deafness and sign language as examples demonstrating other concepts or as means of comparison to other populations. Yet for all of Vygotsky's fame, his role in research and theory in deaf pedagogy is virtually unknown.

This significant gap warrants two analyses: first, a historical analysis that contextualizes Vygotsky's work, and second, an analysis of his theoretical contributions. Following Vygotsky's lead, in the present article I articulate principles and propositions that emphasize deaf students' capacities and construct a vision of deaf education as a positive, creative endeavor. Synthesizing Vygotsky's theoretical framework for deaf pedagogy and juxtaposing it with contemporary deaf research creates two arguments. The first is the *bright triad,* a trio of optimistic framing principles for deaf pedagogy. The second, *five propositions* about deaf development, concerns learning, teaching, and research more broadly. Contextualizing and synthesizing Vygotsky's work illuminates "special pedagogical techniques aimed at the positive uniqueness of [deaf] children" (Knox & Stevens, 1993, p. 17). The aim of my arguments is to make Vygotsky's discussion maximally comprehensible by and thus more useful for deaf students, teachers, and researchers who desire to leverage beneficent, compensatory divergences inherent to deafness and its biosocial development. I suspect Vygotsky would support this goal.

Context Analysis of Defectology

Vygotsky wrote *The Fundamentals of Defectology: Abnormal Psychology and Learning Disabilities* (1993) in Soviet Russia, basing it on research conducted during the 1920s and '30s. In today's terms, the text concerns methodologies and theories of special education— specifically, clinical and pedagogical practices for deaf and similarly exceptional student populations. As indicated in the text's colophon, the English translation was published in 1993. The introduction and afterword, however, reference the Soviet Union as a flourishing, contemporary geopolitical state, dating their inscriptions prior to the fall of the Soviet Union. Following Vygotsky's death from tuberculosis in 1934, Marxist orthodoxy's antagonistic approach to education research "nearly eliminated whatever influence remained to Vygotsky's influence [in Russia]" (Knox & Stevens, 1993, p. 8). Elsewhere, we learn that the Russian version of *Defectology* "never appeared in print before 1983" (Knox & Kozulin, 1987, p. 30). Thus, a partial explanation exists as to why Vygotsky's work on special and deaf education is relatively unknown today.

However, a quarter century has passed since *Defectology* was translated. Since then, few prolonged discussions of his contributions have been published. In particular, the literature lacks serious analyses of Vygotsky's work on deaf pedagogy theory and deaf research methodology. What exists is an apparent paradox—the simultaneous importance and dearth of Vygotskian deaf education research. While innumerable general and specialist deaf

education researchers cite Vygotsky's work (e.g., Jamieson, 1994; Martin, 1991), few cite *Defectology*. In *Educating Deaf Students* (Marschark, Lang, & Albertini, 2002) and *Research in Deaf Education* (Cawthon & Garberoglio, 2017), several authors cite Vygotskian theory, but none recognize his direct work with deaf children. Outside the text, its introduction, and its afterword, one significant analysis was located: Knox and Kozulin's 1987 study *Vygotskian Tradition in the Psychological Study of Handicapped, Particularly Deaf Children*. It is not a surprise that Knox translated and introduced the text of our present interest (Knox & Stevens, 1993).

On the titular terminology,[1] Knox and Stevens (1993) write:

> *Defectology,* which may sound harsh to Western ears, is the current Soviet term for the discipline which studies the handicapped [sic], their development, teacher training and methods . . . . One of Vygotsky's contributions to the discipline was to help provide a strong theoretical basis for [treating] psychology and teaching . . . as a single, unified field. (p. 1)

In this volume, Vygotsky's scholarship is restricted to empirically grounded theorizing about a cross-section of exceptionalities and disabilities including deafness and blindness (*deaf-mutes, blind, deafblind*), emotional and behavioral disorders (*moral insanity, difficult children, mentally ill*), autism, schizophrenia, and intellectual disabilities (*retardation*). While he discusses each, given space limitations I only pursue deaf research in the present article. Vacillating among critiques of other researchers, descriptions of his own experiments, interpretations of theory, and new methodological or theoretical propositions, Vygotsky is transdisciplinary. With respect to disabilities, the main disciplinary foci are pedagogy and educational psychology. Vygotsky argues that they constitute one unified field: *defectology.* This view closely resembles the disciplinary blurring seen in modern disability studies and critical special education (Tremain, 2018; Ware, 2005), but modern deaf education less so, in which psychology and pedagogy are often treated discretely (e.g., Marschark & Hauser, 2008).

Broadly, Vygotsky's methodological and theoretical contributions can be captured in two adjectives: *atavistic* and *prescient*. They are atavistic in the sense that the source material appears remote from our contemporary situation. For instance, deaf bilingualism is never mentioned; for obvious reasons, neither are digital hearing aids, cochlear implants, or, for that matter, computer-mediated communication. *Re-viewing* the text with new theoretical lenses can demonstrate its prescience. Two examples are summarized. First, Vygotsky's scholarship all but predicts the theory of language deprivation (Glickman & Hall, 2019). Vygotsky (1993) writes, "When a human being is deprived of speech [language], muteness cuts him [sic] off from social experiences and excludes him from common [social] ties" (p. 88). The theory of "linguistic paucity" described by Knox and Kozulin (1987, p. 11) is a near synonym that is also based on Vygotskian data. These theories are strikingly similar to Gulati's (2019) clinical description: "Language deprivation [is] asocial [behavior]" (p. 36). A second example is Vygotsky's evolving esteem for sign language. Vygotsky's book constitutes a historically unique case study, similar to Sacks's 1990 work *Seeing Voices.* In both, readers trace autobiographical histories and observe firsthand the profound phenomenological shifts that nondeaf researchers can undergo while discovering the role of sign language in deaf education.

Early in his career, Vygotsky (1993) supported oral instruction, while grudgingly conceding that it was *cruel, murderous* (p. 118), but necessary. However, after extensive empirical and theoretical research, his views inverted, and he came to understand the significance of sign language, termed *mimicry,* gesture, or *gesticulated language*. A translators' footnote clarifies that *mimicry* is "the commonly accepted Russian term for sign language" (p. 116). At his career's culmination, Vygotsky supported polyglossia, an "integrated multisensory approach to [deaf learning that] incorporated several channels of sensory input, tapping the wealth of the overall nervous system" (Knox & Stevens, 1993, p. 18). Polyglossia embraces a range of comprehensible communication modes, including sign languages, carefully selected to teach and develop authentic, fluent *language use,* not decontextualized oral training or phonological drills. In another striking example, a full half century prior to Stokoe's linguistic studies, Vygotsky acknowledged that sign language is *language*, proper and full, in possession of enormous semiotic resources for social and educational discourse in deaf education (Knox & Kozulin, 1987; Vygotsky, 1993). Moreover, Vygotsky adopted another startling position, that sign languages are the *natural* [native] language modes for deaf learning (cf. Snoddon, 2014). Excepting speech and textual modalities,

> [two] languages exist for deaf people: 1) natural language: mimicry and the language of gestures [*sign language*]; and, 2) a systematic language of signs: a conventional [manual] alphabet which consists of various movements of the hand and fingers, called dactylology, or "writing in the air" [*fingerspelling*]. [Both] languages are immeasurably easier for a deaf person; the language of gestures constitutes a deaf person's natural language while oral speech is unnatural for the deaf-mute. (p. 88, italicized terms are modern)

Vygotsky (1993) claimed, "The deaf child is not a normal child minus . . . hearing and speech" (p. 30). This sentiment is nearly identical to the claim by Knoors and Marschark (2014) that "teaching deaf learners is not the same as—or should not be the same as—teaching hearing learners" (p. 24). In the following section, I present two theoretical syntheses, one focused on pedagogical principles and a second that lays out five propositions about deaf development. Both lines of argument trace how and why deaf students are unique in the contexts of teaching and research.

Synthesis—The Bright Triad

Vygotsky's work is important for current scholars even though it was conducted nearly a century ago. In the present section, I synthesize *the bright triad* using the method Vygotsky (1993) recommends—dialectics (pp. 54, 283). Vygotsky's theoretical approach to deaf pedagogy contains three simultaneous principles, which I call *positive differentiation, creative adaptation,* and *dynamic development.* In the discussion that follows, I describe Vygotsky's primary themes about deaf education in teaching, research, and deaf students' educational development. At these themes' core is a simple concept with profound implications: "An educational system without definite, positive societal goals is impossible" (p. 49).

For Vygotsky, *positive differentiations* are biosocial mechanisms used by deaf persons in social contexts that recognize differences as assets to deaf educational development, reflected in scholastic and research settings through holistic, qualitative methods focused on strengths and the organic

unity of cognitive and social processes in deaf education. Positive differentiation acknowledges that the most important changes to and decisions about deaf children's future development occur within the first weeks and months after birth. As Vygotsky (1993) claimed, "The value of a month in mental development is determined by its place in the life cycle" (p. 253). More directly, positive differentiation in deaf psychosocial educational milieus supports the earliest natural expressions of deaf learning and seeks to expand them rather than prevent them. "For pedagogy [it is] necessary to take as a starting point and a basis the natural tendencies of the child . . . a child's drives or natural instincts cannot simply be prohibited . . . by a pedagogue." (p. 112). Elsewhere, he writes that "it is impossible to ban [sign language]; it is the natural language of the child. It may be forbidden . . . and its users punished, but this does not mean that it is defeated" (p. 90). For deaf individuals and social groups, positive differentiation acknowledges the potentiality of deaf gains, like visuospatial learning (Bauman & Murray, 2014). For researchers and teachers, deaf-centricity is the modern referent (Sutherland & Rogers, 2014).

Second, deaf pedagogy is centered on *creative adaptation*, innovative interactions between deaf students and their sociocultural-educational milieu. Salient abilities (deaf gains) are inherent to but latent in deaf children; they must be stimulated and developed from within by purposeful action. By acknowledging, activating, and fortifying areas of strength, deaf educators, parents of deaf children, and others develop students' potential by means of existing skills and abilities, thus circumventing remedial approaches and deficit ideology. Using creative adaptation, educators productively teach deaf students using comprehensible modes and sociocultural tools. As deaf students gain cognitive resources, teachers direct their efforts, using higher metacognitive mechanisms; through abstraction, dialogue, and scaffolding, deaf students learn for understanding and transfer. Vygotsky (1993) demands that deaf educators reject deficit ideology, per which professionals "notice only the defects which are miniscule in comparison with the colossal areas of wealth [disabled] children possess" (p. 68). *Overcoming deficit*s is not the cardinal direction on the map. Instead, educators start with creative engagement, then strengthen teaching practices to holistically support deaf students' cultural-linguistic development and plural roles in educational collectives and civic life. Deaf pedagogies must acknowledge "the necessity of creating special cultural tools" (p. 47) purpose-built for and with deaf learners. Comparable framing is found in current theories of resilience and culturally sustaining pedagogy (Paris, 2012). In this optimistic framework, deaf ontology is the engine of deaf human development; and for deaf students and educators, deaf pedagogy is the ultimate innovative expression of deaf epistemology.

Dynamic development assumes that deaf students' developmental arcs unfold similarly to those of nondeaf students, but with important differences that must be acknowledged. Differences inherent to deafness are not cosmetic. Key changes to social ordering and educational discourses must occur, including adaptations to the design of physical settings and to modes of knowledge, communication, and language used in them. Sensory adaptation plays a significant role in deaf educational development. Vygotsky (1993) posits that "deaf children are capable of achieving full human development [and] active life. The entire uniqueness of [deaf] education boils down to the substitution

of one path of conditioning for another" (p. 112). In contemporary terms, the cognitive capacities of deaf and nondeaf minds are identical, and the brain has no preference regarding language modality (Petitto, 2014); thus, the critical juncture lies in the environment. Bluntly, the social environment—not the hearing loss—disables. Dynamic development applies to individuals, schools, and research programs centered on deafness: for students, in the inherent human impulse to seek social relations by any means available; for schools, in methods and chronology of pedagogy and curriculum; and for research programs, methodologies that orient *healthy deafness* as the hub of all practices. The organizing principle around which all others grow is the deaf child's holistic, healthy development across the lifespan (Vygotsky, 1993, p. 70).

Together, *positive differentiation, creative adaptation,* and *dynamic development* capture the optimistic spirit of Vygotsky's deaf pedagogy. The central importance of the *bright triad* is this: "No theory is possible if it proceeds from exclusively negative premises, just as no educational practice can be based on purely negative definitions and fundamentals" (Vygotsky, 1993, p. 31). To begin with positive assumptions is to construct prosocial goals that develop healthy deaf children in healthy sociocultural-educational environments. Paraphrasing Vygotsky, deaf pedagogues and researchers must center methodological practices on fundamentals that acknowledge and respond to the positive uniqueness of deafness. Modern researchers reach the same conclusion: "We can now imagine replacing deaf education's dreary focus on remediating hearing loss with a Deaf Gain–focused education" (Bauman & Murray, 2014, p. xxxii). Immediately, new lines of inquiry in teaching and research must be developed to examine deafness this way. On these three principles, we must reject (a) negativistic, deficit-derived characterizations of deafness present in many schools, research paradigms, and comparative methodologies of pathology, deviation, and abnormality. Likewise, we must reject (b) uncritical or reactionary theories and ideologies of deafness that promulgate a "vacuous celebration of difference" (Luke, 1998, p. 35). From first principles, Vygotsky's optimistic ethos for deaf pedagogy acknowledges the unique needs of deaf children and reflects distinct traditions of pedagogy and research based on them. To enact this vision, theorists of deafness and deaf educators must develop propositions that use positive premises to stimulate and energize deaf development via "positive, creative pedagogy" (Vygotsky, 1993, p. 50).

Synthesis—Five Propositions

Vygotsky (1993) states that "the task of educating deaf-mute children, in all probability, [is] the most interesting and difficult chapter in pedagogy" (p. 87). One of Vygotsky's primary goals was to develop scientific laws to describe fundamental knowledge or the "philosophical foundations" of deaf learning, teaching, and research methods (p. 31). To this end, I posit five propositions, or theoretical arguments, about deaf development, generated by synthesizing and juxtaposing Vygotsky's work with modern research. The results can be judged against socioeducational relationships in deaf education, including how the deaf child exists within home and school environments, and, more broadly, the political positioning of deaf students in civic and research contexts. Most evidence is derived from *Defectology* and, where warranted, from outside it. All five propositions leverage Vygotsky's characteristic optimism in response to the absorbing,

difficult challenges of deaf pedagogy and research methodologies.

> ***1. The biosocial proposition.*** *Deafness is a biosocial condition located in two simultaneous, interlocking, and mutually reinforcing positions: (a) biologically, from within developing deaf bodies and minds; and (b) socially, from within cultural-historical environments. Inasmuch as human knowledge is biologically manifested and socially constructed, deaf education is a unified biosocial entity which cannot be practically divided.*

Vygotsky (1993) writes, "The biological, by means of social factors melds into the social . . . . This is the true material of psychology [and pedagogy]" (p. 155). He explains that all children, including deaf children, learn in one precise biosocial manner; individual learners and teaching environments are united inexorably and must be understood as a dyad that coevolves in a complex ecology of development. Development occurs across time in purposeful, biosocial interactions. Deaf students, like their parents and teachers, are active decision-makers. All are motivated and agentive, working in concert to shape and control environments and interactions across time. Vygotsky writes, "The conception which has been adopted in the West [refers to divided] forms of child upbringing—that which is based on biological factors [or] governed by social factors . . . this mechanistic notion is unfounded" (p. 124). Deafness and deaf education are jointly biosocial, ontologically constituted, and shared epistemologically. As a natural human variation, deafness results in adaptive differences shaped by sociocultural tools in educational contexts to develop higher-order processes. "Both lines of development—natural and cultural—coincide and merge into one another . . . mutually penetrating each other to form, in essence, a single series of formative socio-biological influences" (p. 42). Elsewhere, he is more direct: "There is not a single instance where the biological can be separated from the social" (p. 92). Simply put, the individual deaf student and their educational environment, whether deaf, nondeaf, or mixed, constitute a *single unified entity,* whose functions are interdependent.

> ***2. The sensory delimitation-and-consciousness proposition:*** *Deaf cognition is inherently whole, but delimited by comprehensible sensory modes. Deaf epistemology diverges from nondeaf epistemology precisely because deaf ontology differs from nondeaf ontology. To acknowledge differences inherent to deaf ontology and deaf consciousness is simultaneously to acknowledge the necessity of different methods in teaching and modes of discourse for learning and deaf epistemological development.*

Vygotsky (1993) teaches us that correct diagnosis depends on accurately differentiating primary and secondary manifestations (*symptoms*). "The path of research leads from symptoms to that which lies behind them" (p. 276). Understood this way, that deaf students cannot hear speech language is secondary to a more foundational problem about the development of conscious self-awareness in the deaf child, usually revealed by language. Knox and Kozulin (1987) specify that "the principle goal Vygotsky set for educators of the deaf is the full development of a child's personality and consciousness through meaningful interaction with the world" (p. 12). For deaf consciousness to arise and satisfy the deaf child's communicative impulse (and thus generate a scaffold between child and society), meaningful interactions *must* be attuned within the limits of the sensible for

the child. To ensure the complete development of consciousness, all child-directed discourses in deaf development must be fully accessible to and comprehensible by the deaf child. The failure to alert consciousness to itself in deaf children *results* in language deprivation, a secondary symptom that negatively affects learning. What is most remarkable about language is *not* its form or content, but its function—to develop cultural significance and social meaning with others in interlocution. Vygotsky writes, "[Language] springs up from the need for communication and thought; [they are the results] of adaptation to complicated living conditions" (p. 90). The unique metacognitive function of language is its ability to transfer thoughts among individual conscious actors. "In other words, without [language] there is no consciousness, no self-consciousness" (p. 89), and no communication. And without self-consciousness, language has no purpose.

Stated differently, the failure of a deaf child's consciousness to awaken is a direct *result* of insufficiently differentiated knowledge modes, a result of impaired social structures or of those poorly adapted to the delimited sensory configurations and social needs of deaf youth. In current terms, language deprivation is caused by negligent action in the social environment. However, its most insidious damage is inscribed as maladapted neurobiology in the deaf child. The deaf child is not to blame; nor are the perceived faults of sign language. Instead, disorder is created by those who prevent full access to comprehensible discourse, which stymies natural sign language acquisition. The failure to establish conscious self-awareness (via language) limits self-aware thinking, constrains higher-order intellectual growth, and circumscribes motivated learning later in development. In the biosocial dyad, social actors in the environment are more mature epistemologically, chronologically, and developmentally; they are gatekeepers of cognitive development for the deaf child, who is less mature in these respects by default. Robbing a deaf child of accessible knowledge impairs social processes and results in language deprivation, which damages the brain on a physiological level. The cascading failures of metacognitive self-regulation in deaf children are *dependent on* the inaccessibility of modes that withhold meaningful and comprehensible social interaction. In short, for the development of deaf consciousness, the simple fact of sensory delimitation demands discursive adaptation in the social environment.

> ***3. The adapted tools proposition:*** *Adaptation is the positive response that sublates disabilities, including deafness, in biosocial interaction. When deaf students and deaf educators act in concert, better and worse sociocultural tools may be deployed. Positive adaptation refers to purposefully differentiated biosocial educational tools and spaces that enhance functioning and promote higher development in deaf students.*

In adaptation, biological hearing loss is transversely bridged via sociocultural tools. "When one biological function [i.e., hearing] fails . . . the second line of development (with the help of numerous sociocultural tools) can enlist other biological functions [including touch and vision] to circumvent the weak point and build a psychological (mental) superstructure over it." (Knox & Stevens, 1993, p. 13). Vygotsky (1993) centralized sociocultural tools in deaf education, arguing against a dominant cognitive [*mentalist*] model of intellectual development. "During *active adaptation* to the environment, the organism and the personality work out a series of functions, with the help of which they compensate,

equalize, and sublate the deficit" (p. 125, emphasis added). Neurological research on cross-modal plasticity in deaf learners supports these claims (Petitto, 2014). When teachers adapt biosocial tools and environments to the needs of the deaf child, they are working with capacities rather than deficiencies toward mutual development. Knox and Kozulin (1987) explain:

> Researchers at the prestigious Moscow Institute of Defectology assert that only a truly differentiated learning environment can fully develop a deaf child's cognitive skills and overall personality because only in the specially manipulated setting proposed by Vygotsky and his followers [teachers] exclusively serve the individual needs of a [deaf] child, *building on strengths and uniqueness, not on handicaps*." (p. 28, emphasis in the original)

Deaf students are not the only ones who adapt toward deafness. As teachers learn or grow over time, they refine useful repertoires of practice and reject disadvantageous ones. Educators' use of sociocultural tools enhances the environment for the benefit of the child, which stimulates the child toward development, who enhances the environment in turn. The same is true for parents of deaf children (Jamieson, 1994). Whether in a deaf-centric (separate) or nondeaf (inclusive) educational milieu, the deaf child and the environment are intertwined; social relations are separated or conjoined by including or rejecting the sociocultural tools of adaptation. All actors in the deaf biosocial dyad can negotiate and use and adapt tools like language, drawing, and gesture. For teachers, these correspond to larger toolboxes or repertories of practice, such as polyglossia and multimodality (Kusters, Spotti, Swanwick, & Tapio, 2017). The deaf educators' primary task, Vygotsky argues, is to construct an optimal environment for deaf learning by adapting knowledge to available sensory systems and by using multiple forms of comprehensible discourse, thus superseding the biological constraints of sound and speech.

> ***4. The multimodal [polyglossia] proposition:*** *The primary difference between deaf and nondeaf pedagogy lies in the means to achieve contiguous educational development; in all other ways, deaf, special, and general education should be identical. Accessible modes of discourse are plural but must be configured to deaf sensibilities. Multimodality is the grounded theater of operations in which deaf pedagogy (and research) operates.*

Vygotsky (1993) advocates a novel curricular pathway: "Polyglossia [consists of] multiple paths for the development of [language] in deaf-mute children" (p. 207). In describing polyglossia—his final framework of deaf pedagogy—Vygotsky is prescient, using the idea of differentiated instruction for perhaps the first time in pedagogical science. Injecting current terms invigorates his description (pp. 207, 299): *Language is plural in form, inclusive mutually reinforcing (not competing) modes in deaf education—oral, written, and signed, to the exclusion of none. In deaf education, communication is the broader rubric subsuming language, and discourse envelopes both. Deaf pedagogical discourses are engendered through and supported by multimodal, social semiotics in interaction, instruction, and institutions.*

Vygotsky (1993) elaborates on these connections and creates an argument that simultaneously frames methodology and theory in deaf pedagogy research and their application in teaching:

> 4. The need arises to reexamine the traditional theoretical and practical relationship

> among various kinds of speech [language] in deaf-mute children, and particularly required is a reexamination of the relationship between *mimicry* [sign language] *and written language*. 5. Experimental and clinical research in psychology concurrently demonstrate that polyglossia (the mastery of a variety of forms of speech [language modes]) is unavoidable, given current conditions in pedagogy for the mute. It is the most fruitful path for speech [language] instruction for deaf-mute children. 6. Therefore, there should be a radical change of the traditional view which holds that various forms [modes] of language compete with each other and mutually interfere with the development of the deaf-mute child and we should set forth the theoretical and practical question about cooperation among them and the evolution of complexity in structure at various levels of instruction. (pp. 298–299, emphases preserved, bracketed terms added)

Written in 1930, these points comprised Vygotsky's conference notes written 4 years prior to his death. They represent the culmination of his research on deaf pedagogy. Ninety years later, his arguments are critical and his questions remain unanswered. Among other questions about hybridizing modes, we must ask: How does polyglossia compare to *Simultaneous Communication* (Myers & Fernandes, 2010), *Cued Speech* (Marschark & Spencer, 2006), *deaf translanguaging*, and *deaf multimodal pedagogy* (Kusters et al., 2017)? Only one tension unites these disparate approaches—cooperation *or* conflict among knowledge modalities.

> ***5. The conflict proposition:*** *From ontogenesis, conflicts arise from deafness in terms of contrasting ways of being and knowing. Ontological and epistemological manifestations of deafness produce disagreement in axiology (the study of ethics, politics, and ideology). The unique arcs of deaf biosocial development reorder the trajectories of power relations in educational interaction and configure the politics of deafness.*

Vygotsky (1993) argues that disability "is only a social concept" (p. 83). Insofar as this is true, deafness engenders biosocial conflict and governs power in deaf education and shapes all aspects of deaf life. "The immediate consequence of [disability] is to diminish the child's social standing; the [disability] manifests itself as a social aberration. All contact with people, all situations which define a person's place in the social sphere . . . are reordered" (p. 35). Vygotsky's notion is extended by Knox and Stevens (1993) to include social reordering in ethical frameworks that comprise and regulate deaf pedagogy and deaf research (pp. 9–10). Vygotsky develops a related argument: Innate compensations of disability arise organically from biosocial struggle in relation to itself *and* in relation to the external social context; however, conflict also constitutes the true material of development (p. 283). Research in deaf education and hierarchies of language are ideologically constructed, often based on the values of the nondeaf majority, at the expense of the deaf minority (Reagan, 2011). A critical point remains unsaid: The natural instincts of deaf children may not arise automatically by themselves; instead, they must be *prompted to development* in the social sphere (Vygotsky, 1993, p. 59). Doing so actively confronts social inequality and forces the articulation of an ethical code of conduct. Two fundamentally contrastive ethical pathways are determined by the valuation of deafness. In one, the experiences of deaf people are overtly valued; in the other, they are devalued. Said differently, parents and pedagogues take

the lead in conscious cognitive development using sign language and other visual tools; their validation of deaf ontology and deaf epistemology is a deaf-empowering axiological stance. Without purposeful and prosocial developmental engagement, comprehensible modes cannot be leveraged and their sociocultural functions cannot be strengthened. "Pedagogy cannot close its eyes to the fact that expelling [sign language] exaggerates and expands the fundamental obstacle to their development" (Vygotsky, 1993, p. 207). To ensure peak performance, decision making by parents and pedagogues must assertively address this conflict to the benefit the deaf child who is dependent upon them. In this way, to neglect the role of axiological conflict in deaf education is to invite harm. *Withholding* sign language impairs deaf development.

The Limits of Vygotsky

Acknowledging Vygotsky's brilliance is not to neglect unresolved dilemmas. Two are cited here: First, an early instrumentalist view of visual modes and, second, the general problem of opposing speech and sign. Vygotsky (1993) initially posited that visual knowledge, sign language, and graphic representations are limited. He argued against "the exclusive dominance of visual aids" in special education (p. 50). "Operating on exclusively concrete and visual representations, we hold back and impede the development of abstract thinking, [which] cannot be replaced [by] visual techniques" (p. 138). Speculating that visual modes hinder advanced reasoning is flawed theoretically and methodologically when compared to current qualitative research with visual modes and processes, like dual-coding theory, in particular, investigations of deaf epistemology, deaf visual literacy, and deaf multimodality (Kuntze, Golos, & Enns, 2014; Young & Temple, 2014). On the issue of vision in deaf pedagogy, Vygotsky twice contradicts the initial quote, once in relation to methods of instruction and again in regard to methods of research. First, "It is possible to teach a [deaf] child 'to hear with his eyes'" (p. 68). Here, Vygotsky is correct—deaf students obtain sensory data visually and learn with visual modes. Although not fully resolved in current literature, empirical and theoretical research shows that visual tools in deaf pedagogy promote higher-order, abstract thinking and literacy learning for transfer (Easterbrooks & Stoner, 2006; Skyer, 2018). In terms of vision in methodology, Vygotsky writes, "[In empirical measurement], everything depends on the possibility of complete, creative training of our eyes . . . the task of methodology is not only to learn to measure, but also to learn to see" (p. 274). Qualitative methodology, which Vygotsky championed for deaf research, has advanced considerably, and largely in support of the second claim. Among other designs, visual phenomenological inquiries or rigorous empirical studies of multimodal deaf education with robust interpretation of visual data could resolve these dilemmas and subvert ossified ideologies of deaf cognition. Such investigations would challenge folktales of superior vision on the part of deaf people (pp. 67, 78, 99) and the dearth of contemporary evidence about it (Marschark et al., 2017).

The other initial blunder Vygotsky (1993) makes is his tacit support of the argument that sign and speech are modes in diametric conflict. Suffused throughout *Defectology*'s early chapters is the implied linguistic ideology that "*speech = language*," a concept that permeated his era. Vygotsky acknowledges and reacts to this conflict, but does not resolve it. Contradictions emerge from two

positions. In the first, he states that oral instruction is unnatural for deaf learners; it "contradicts the child's nature. It is even necessary to break the child's nature in order to teach him speech. Here is truly the tragic problem of special education for the deaf." (p. 118). Elsewhere, he reverses his position: "A child's instincts must be made his allies and not his enemies." (p. 90). Early in his career, Vygotsky suggested that it was necessary to forcibly compel deaf children to speak, the rationale being that inner thought could only be developed by speech. Later in his career, he contended that deaf sign language is the natural language of deaf people, likewise noting that researchers must reject the view that "holds that various forms [modes] of language compete with each other" (p. 299). Vygotsky also forcefully argues that special pedagogy ought not create an environment that *accentuates disability.* It could be argued that the accentuation of disability in deaf education occurs most acutely in aural/oral contexts, where speech language *pathology* exemplifies the issue. Difficult to perceive completely in speechreading and difficult to produce even with technologies of aural support, it could be argued that an exclusive focus on oral-aural modes most accentuates deficits and reinforces pathological self-concepts in deaf learners' development. In contrast, natural, gestural-visuospatial modes like sign language support deaf students' natural strengths and their holistic development (p. 118). The critical point is this: Sign language and speech language are not diametrically opposed, and, in fact, mutually reinforce one another within a broader framework of bimodal literacy, as current deaf bilingual-multimodal and deaf translanguaging research shows both empirically and theoretically (Garcia, 2009; Kusters et al., 2017).

Both dilemmas reflect the times in which *Defectology* was written. We must also note that in Marxist-Leninist ideology, the *homogenous*-collectivist approach to social ordering was a hegemonic imperative. In that framework, the collective (not the individual) was the basic unit of analysis. Such an ideology devalued diversity by design and instead championed inclusion for assimilation. Studying disability as part of critical diversity studies offers a fundamentally divergent stance on the same issue (Tremain, 2018). It is unclear where differentiated instruction for deaf students fits within this tangle of ideologies. Additional research into bimodal literacy within multimodal deaf pedagogy is needed. To resolve these issues, researchers might begin by placing bilingual deaf education models in more appropriate contexts, such as Garcia's (2009) frameworks of bilingual ideology (monoglossic and heteroglossic) and Kusters et al.'s (2017) challenge to reconcile the tension between multimodal-multilingual communication and translanguaging studies with respect to deaf pedagogical discourse.

Conclusions

In addition to its significant historical interest, *Defectology* provides insights into and impetus for contemporary deaf education research. In a word, Vygotsky promotes a *creative* vision for deaf pedagogy; however, his optimistic beacon is hidden in obscurity. For instance, a graduate student in a deaf education teacher-training class recently asked me, "Where can I find literature on creativity and deaf pedagogy?" In the present article, I have attempted to elucidate Vygotsky's creative vision for deaf pedagogy and its research by using dialectical synthesis in service of answering that student's question. Toward this goal, I have

developed principles and propositions for deaf educators and researchers. The first shows three essential guiding principles for deaf pedagogy, described as *positive differentiation, creative adaptation, and dynamic development*. In the second, I developed five propositions about deaf development for deaf research, organized around these conceptual themes: *biosocial, sensory delimitation-and-consciousness, adapted tools, multimodality, and conflict*. Together, these principles and propositions summarize the challenges Vygotsky posits for researchers of deaf pedagogy. These challenges remain, for they cannot be resolved in obscurity, in isolation, or without cooperation.

The field of deaf pedagogy must further develop Vygotsky's infectious, future-oriented, and creative ethos and construct rigorous academic programs that acknowledge the strengths and subvert the weaknesses of extant methods, models, and theories. My hope is to increase the visibility of Vygotsky's theoretical and methodological work on deaf pedagogy, and with some luck prompt others to investigate this area of study. In time, the void where Vygotskian scholarship on deaf pedagogy ought to reside will be filled. Presently, this work is incomplete. Vygotsky (1993) claims that cooperation is key (p. 205). At the end of a conference, he stated that deaf research must orient itself toward the future. To paraphrase, *the center of gravity must shift* (p. 208). With an epigraph, Vygotsky argues, "We must proceed until every elementary teacher can teach even the deaf child and . . . until each elementary school becomes simultaneously a school for the deaf" (p. 91). These are the practical, theoretical, and methodological challenges of our time, which *will* be resolved, but only given our enthusiasm, optimism, and creativity.

Note

1. A note on terminology is needed before further analysis, as terms frequently change in the modern research fields similar to defectology (including psychology, pedagogy, deaf education, deaf studies, special education, and disabilities studies). For the purpose of clarity, I have updated key terms to allow for comparison to new theories and evidence corpora and indicate where changes are necessary. Conceptualizing *defectology* relative to modern equivalent terms, like special education, makes arguments more sensible. Other terms are changed because they are offensive to modern audiences; for instance, Vygotsky writes about subtypes of *mental retardation,* such as *debile, feeble-minded, idiot, moron,* etc. In most cases, I provide both new and old terms, which are typographically indicated. Although new and old theories do not neatly map to one another in a one-to-one relationship, using near synonyms assists comprehension of the text's substance, rather than its appearance. One example is shown in detail here, with modern terms in italics and Vygotsky's in brackets. This example shows why updating terms is almost *necessary* given the complexity of this asynchronous reading task:

> *Visual, tactile, auditory, and other types of knowledge are manifested via multimodality* [polyglossic semiotics] *in social settings; biosocial* [sociobiological] *communication is socially supported and biologically perceptible to children using healthy* [intact] *sensory modalities* [analyzers]*; sign language* [mimicry] *is useful in deaf education* [pedology and defectology] *to develop language* [speech] *abilities, because it is comprehensible and biosocially compatible; deaf students adapt to* [compensate for] *disabilities* [defects] *in hearing with visuospatial knowledge modes* [forms] *and sociocultural teaching tools.*

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