The zone of proximal development as an overarching concept: A framework for synthesizing Vygotsky's theories

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ABSTRACT

The zone of proximal development (ZPD) is defined as an overarching concept that integrates the main tenets of Vygotsky's theory of human development. The conceptualization of the ZPD begins with its social, cultural, and historical context and traces its development as a spatial and temporal metaphor that reflects the sociogenetic root of all human mental functioning. Beyond the explication of sociogenesis, the ZPD is reconceptualized to include the notions of voice and dialogicality. The insights gained from the fields of semiotics and discourse studies allow a broader understanding of the ZPD by bringing to light participant structures and institutional and historical forces that may not have been included in the dominant interpretations of the ZPD.

The zone of proximal development (ZPD), a concept developed by the Russian and Soviet psychologist Lev Vygotsky, has become the most widely researched, cited, and critiqued idea among all of Vygotkky's writings (Daniels, Cole, & Wertsch, 2007; Lloyd & Fernyhough, 1999; Wells, 1999). Despite the wide interest and research into this concept, the ZPD remains a concept that still results in understandings and interpretations that are far from unambiguous. This lack of understanding and unanimity in the conceptualizations of the ZPD may be one important factor that contributes to continued theoretical research and empirical investigations into this concept.

The significance of the ZPD, as a concept that offers valuable insights into the nature of human development, has been acknowledged within the fields of psychology and education. More specifically, the ZPD played a critical role in offering principles of effective learning in both formal and informal contexts in various domains of human functioning. Emphasizing the social origin of all human mental processes, the notion of ZPD guided researchers toward focusing on how individual cognitive and affective processes originate in actual human interactions.

The purpose of the present paper is to build from the current conceptualizations of the ZPD but to go beyond to present the zone as a synthesizing concept that integrates all of Vygotsky's main ideas regarding human development. In this process, aspects that can contribute to a fuller understanding of the ZPD will be introduced and examined in the context of broadening the scope of the ZPD.

To fulfill these aims, the discussion of the ZPD will begin by situating the concept within its historical development. As a concept that illuminates the process of development, the concept itself has gone through many developmental stages and continues that path to date. This will allow an understanding of how current conceptualizations of the ZPD are in alignment with Vygotsky's original formulations.

Following an outline of the ZPD will be a section that explores the potential of the concept to integrate all of Vygotsky's developmental ideas. *The synthesizing power of the ZPD will be delineated by exploring a set of pairs of dialectically interrelated concepts.* In the penultimate section, the focus will be on 're'conceptualizing the ZPD by including insights gained from disciplines such as discourse studies and semiotics. This reconceptualization will contribute to a broader understanding of the ZPD. Finally, the conclusion will focus on summarizing the main points of the discussions and on providing directions for further research.

Outline of the zone of proximal development

Historical background of the zone of proximal development

As mentioned at the beginning, the ZPD is one of the most widely known and studied Vygotskian concepts. According to Veresov (1999), this popularity may in part derive from the scarcity of Vygotsky's writings either in the original or in translations. Even in places where he described his conception of the ZPD, he did not provide sufficient information for a concrete operationalization of the construct. Recognizing the potential of the ZPD in contributing to an understanding of human development, his followers and other socioculturally oriented researchers attempted at elucidating the concept.

Vygotsky outlined the concept of ZPD mainly during his Leningrad period between the years of 1931 and 1933 (Veresov, 1999). Like many scientific ideas, Vygotsky's formulation of the ZPD built on the works of many researchers in various domains. In the field of physiology, Vygotsky borrowed ideas contained in the theory of central inhibition as outlined by the Russian physiologist Ivan Sechenov (Veresov, 1999). Sechenov's theory explained how an external act transforms into an internal one. This theory became an important principle in explaining how the collective activity carried out in the zone becomes internalized.

In the field of psychology, the law of sociogenesis, as propounded by the French psychologist Pierre Janet may have influenced Vygotsky's thinking on how individual mental processes originate on the social plane (van der Veer & Valsiner, 1991). In addition to physiology and psychology, Vygotsky's background in literature and interest in the theater (Valsiner & van der Veer, 2000) may have influenced the ideas within his concept of the ZPD. This possibility explains Vygotsky's thinking related to how dialogic interactions between people are influenced by their inner motivations (Vygotsky, 1987a) and the importance he attributed to interpreting the meanings contained within verbal exchanges. In this context, Zinchenko (1995) noted that what gets internalized within the zone are the sign-related (e.g. linguistic meanings contained in the dialog) properties.

At the level of personal history, Vygotsky's private lessons with his tutor Solomon Ashpiz may have influenced his formulations of the ZPD (Blanck, 1990; Levitin, 1982). During their private lessons, Ashpiz employed a form of instruction that is characterized as the Socratic dialog. Cheyne and Tarulli (1999) note that the Socratic dialog is indeed one of the dominant genres of discourse employed in the ZPD. The main feature of this type of dialog is that there is an effort to negotiate meanings as participants of the teaching and learning process attempt to co-construct a new understanding. The learner attempts to recreate the meanings formulated by the instructor by questioning and analyzing their discourse. This form of dialogical instruction, therefore, acknowledges the active role of the learner in the collaborative process. Only by actively processing and negotiating the meanings contained in the social action can the learner fully internalize and become an independent user of what has been acquired within the zone.

Defining the zone of proximal development

The most explicit definition Vygotsky offers regarding the ZPD is contained within his discussions on the relationship between learning and development. In this context, Vygotsky defined the ZPD as 'the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under guidance or

in collaboration with more capable peers.' (Vygotsky, 1978) Although not addressed explicitly, the concepts that form the cornerstone of Vygotsky's theories of human development are captured in this definition of the ZPD. Mediation is included by the support of a more capable person and the verbal interactions that occur between the participants in the zone. The process of internalization is partly captured by the word 'potential' or to be more accurate and literal 'the closest' development stage. More specifically, what the less competent participant in the zone can accomplish with the help of the more capable person becomes internalized and forms the basis for the next closest developmental phase. Only what is within the very next developmental zone can be internalized via mediation from others, through social interactions. Within this conception of the ZPD, instruction has to focus on the functions that are ready to develop with the appropriate support from more knowledgeable other. These developing functions, in turn, will be internalized and used by the learner independently after the support is withdrawn.

The collaborative efforts within the zone have been the basis for the link many researchers (e.g. Cole, 1996; Newman & Holzman, 1993; Veresov, 1999; Wertsch, 1991; Wertsch, Tulviste, & Hagstrom, 1993) have made between the ZPD and the general genetic law of cultural development. This law, as formulated by Vygotsky (1978), stated that every function in children's cultural development appears twice, on two planes. It appears first as an interpsychological category between two people (e.g. a child and an adult) and then on the intrapsychological plane within the child. As will be explicated in greater detain in the next section, the ZPD is a broader and more encompassing view of human development than the law, because of its focus on developmental mechanism and the inclusion of human activity, including teaching and learning.

Against the aforementioned historical and theoretical background, diverse interpretations and applications of the ZPD may be found within the scientific literature. As mentioned previously, these varying conceptions of the ZPD may in part be due to a lack of an explicit operationalization of the concept by Vygotsky (Valsiner & van der Veer, 2000). Although a complete operationalization of the ZPD is an ongoing project, there is much research-based information that serves as guidelines in outlining the concept.

Lave and Wenger (1991) present the most comprehensive outline of the ZPD that seems to encompass the three dominant forms of interpretation. First, the ZPD has been construed as the distance between individual performance and assisted performance. The authors note that this scaffolding interpretation has led to instructional approaches that provide support from more experienced and knowledgeable person until the less competent person can internalize the skills and knowledge from the assisted performance and begin to perform individually. Second, the ZPD has been interpreted as the distance between understood and active knowledge (Hedegaard, 1988). Understood knowledge is acquired via formal instruction and corresponds to Vygotsky's formulation of scientific concepts. Active knowledge is gained by informal interactions of the individual with the world and relates to Vygotsky's notion of everyday or spontaneous concepts. Finally, the ZPD has been defined as the distance between individual activity and societal activity (Engeström, 1987). This view of the ZPD focuses on processes of social transformation as individuals engage in collective efforts to create new forms of social practices.

The spatial image of the ZPD, formulated as the distance between a beginning point and the aim of development, serves not only metaphorical functions, but also reflects the nature of development itself, as envisaged by Vygotsky. Bodrova and Leong (2007) note that Vygotsky used the word 'zone' because he wanted to reflect development as a continuous process rather than a point on a scale. The ZPD as a developmental mechanism (Cobb, Wood, & Yackel, 1993; Eun, 2008), therefore, emphasizes the continuous collective journey as participants within the zone strive to arrive at transformative understandings of the world. This is why the ZPD reflects development itself (Lloyd & Fernyhough, 1999), which was always at the heart of Vygotsky's research (DiPardo & Potter, 2003).

Not only is the ZPD related to the concept of space, but it is also a time-dependent construct (Grigorenko & Ravich-Shcherbo, 1997). Prolepsis (Cole, 1996; Stone, 1993), performance before competence (Cazden, 1981), and functional loan (Zazzo, 1968; cited in Del Río & Álvarez, 2007) are some of the time-related factors identified by various researchers as supporting the developmental mechanism. Prolepsis refers to representing future events as if they have already happened. Proleptic instruction

therefore assumes that the learner already possesses the competence needed to successfully complete the task at hand by lending the cognitive tools the more competent person possesses. This is what is meant by performance before competence and functional loan. Bruner (1986) specifically points to the 'loan of consciousness' as the motivator for getting the child to go through the ZPD. The novice or children in the zone 'borrow' the knowledge and skills of adults or experts to perform tasks they would not be able to complete on their own. In anticipation of the future competence, the present performance is supported by more competent people.

An important aspect to consider in defining the ZPD is the relationship between the individuals within the zone and the social context. As the nature of social in the ZPD will be explored in detail at a later section, here it will suffice to mention that the social context varies its relationship to the individual depending on the developmental stage of the individual. Therefore, the same environment may have different influences on the child depending on his age or developmental level. This unique relationship of the individual and the environment, Vygotsky (1998, p. 198) labeled 'the social situation of development.' An operationalization of the ZPD has to take into account this unique relationship because it is what determines the path from the social to the individual. The emphasis on the original relation of social reality to the person is one of the features that distinguishes Vygotsky's theories from other social interactional theories. The mutual influences of the person and the environment are made specific within a given age period.

One last issue to examine with regard to the ZPD is the continuous nature of development as it occurs across the lifespan (Rogoff, 2003). The ZPD has been mostly identified as a concept that has relevance for child development in ontogenesis. However, the principle of collaboration to independence extends to all phases of human development. What one can achieve only with the support from others becomes what one can perform independently. This in turn becomes the beginning point for the next ZPD. As this process continues, the zone never stops shifting its point of departure and final destination.

The zone of proximal development as an integration of dialectically interrelated concepts

Moll and Whitmore (1993) note that the concept of the ZPD may help to integrate Vygotsky's theoretical views but does not go on to provide details as to how this integration might be accomplished. This section is an attempt to continue the idea presented by these authors by exploring into why the ZPD may serve to unite Vygotsky's theoretical framework. To present the ZPD as a concept that encompasses the major tenets of Vygotsky's theories of development, the following discussion will focus on presenting a set of pairs of concepts that are dialectically unified within a Vygotskian perspective. The explication of the concepts highlights the ZPD's relationship to the general genetic law of cultural development, which in turn was at the heart of Vygotsky's research on human development, as mentioned before. Therefore, although discussed separately for the sake of exposition, these paired concepts are all interrelated as they reflect Vygotsky's theoretical vision of human development.

Interpsychological and intrapsychological

From the very beginning of his work on human development, Vygotsky rejected the strict separation of the individual and the social (Vygotsky, 1934/1962). The theoretical tenet that formed the very core of his research was the sociogenesis of all human mental functions (e.g. memory, attention, and perception). All individual mental functions (i.e. intrapsychological plane) originated as actual human relations and interactions between two or more people (i.e. interpsychological plane). Through assistance, collaboration, and mediation, what was once carried out in the interpsychological plane becomes internalized and begins to perform intrapsychological functions (Asmolov, 1998).

Because of the inherent link between the interpsychological and intrapsychological planes through genetic transformation, Wertsch and Toma (1995) maintained that the forms of interpsychological functioning will be reflected in subsequent intrapsychological functions. The forms of dialogic interactions,

discursive practices, and cultural tools employed by people engaged in collaborative activities, will all be reflected in the individual mental processes. This is why even the innermost sphere of human consciousness retains a dialogical nature (Eun, Knotek, & Heining-Boynton, 2008).

Internalization and externalization

According to Engeström (1999), internalization as the process of appropriating the verbal interactions and cultural tools in joint activities may be viewed as the reproduction of culture. An example would be young children who attend schools for the first time learning to conduct themselves appropriately within the formal instructional setting via the guidance of teachers. Externalization, on the other hand, is the production and creation of new culture. An example would be the same students coming up with a modified set of behavioral norms, based on what they have acquired, suited specifically for them via negotiation with teachers and other existing participants.

The two processes continue in a cycle of expansive transformation (Cole & Engeström, 1993) as people continuously make use of existing culture to further their developmental process and in turn contribute to the culture by providing new means and cultural artifacts as results of their development. Internalization occurs in an inseparable unity with externalization (Lompscher, 2002), as what has been internalized from social interaction further externalizes and transforms the social practices.

As internalized knowledge becomes externalized, it becomes reorganized (Martí, 1996). More specifically, the knowledge and skills that were internalized become more explicit, reflective, and conscious as they are created anew at the externalization stage. If what had been internalized merely reproduced itself on the externalization phase, culture would remain static and unchanged. By reorganizing and restructuring the knowledge system handed down by culture, and by creating new forms of cultural tools, humans transform culture and give it a dynamic quality. Externalization is the process that allows both cultures and humans to develop together as they influence each other in transforming current capacities and tools of functioning.

Scientific concepts and everyday concepts

The connection between scientific and everyday concepts to the ZPD was noted previously when describing the three dominant interpretations of the ZPD. Scientific concepts are learned through formal instruction through the mediation by a more knowledgeable person using the system of concepts already developed within the larger social, historical setting. In contrast, everyday concepts are developed in daily interactions between people and their world without systematic or formal instruction.

The beginning point in the ZPD is the learner's everyday concepts. Through the mediation of 'another human being' and of cultural tools such as language and other symbolic systems, the systematized knowledge of the larger society is appropriated by the learner. In accordance with Vygotsky's dialectical view, scientific and everyday concepts cannot exist without the presence of the other. These two forms of concepts are inseparable in that the development of one type presupposes the development of the other. Everyday concepts, as already mentioned, provide the ground in which scientific concepts can begin to develop. By being concrete, specific, and situated, everyday concepts pave the way in which personal experience may move toward generalization and abstraction. Scientific concepts, in turn, provide systemic conceptual network for everyday concepts to develop as 'abstraction allows us to ascend to a detailed understanding of the concrete and particular' (Bakhurst, 2007, p. 70).

As everyday concepts are externalized and scientific concepts are internalized within the zone, the former becomes more conscious, reflective, and systematic, and the latter becomes enriched with meanings based on personal experiences. These interdependent conceptual processes within the zone serve as the basis for viewing scientific and everyday concepts as the main dimension of the ZPD (Daniels, 2007).

Learning and development

In the context of explaining the implications of the ZPD for instruction, Vygotsky argued that in order for instruction to be effective, it has to be ahead of and lead development (Vygotsky, 1987a). The zone provides a spatial metaphor, in which, this leading role of instruction and its relationship to development (Bodrova & Leong, 2007) may be captured. The teacher (or the more capable person) targets those functions that are ready to develop within the learner (or the less capable person) with the appropriate support and guidance.

The zone, thus viewed, may be defined as a dynamic region of sensitivity to instruction (Wood, Bruner, & Ross, 1976; Wood, Wood, & Middleton, 1978) because the more capable person has to be able to target those functions that are 'ready to develop.' Instruction that targets functions that have already developed, or functions that are not included in the proximal development zone will not lead to development. Rather, in worst case scenarios, developmentally inappropriate instruction (i.e. instruction that lags behind the potential of the learner) may lead to regression (Lloyd & Fernyhough, 1999), rather than, progression in the individual's developmental path.

Speech and thinking

The relationship between speech and thinking is a topic that Vygotsky focused on throughout most of his research and writings. This continued interest may have its roots in various areas of Vygotsky's life. His background in law, philosophy, literature, and his personal encounter with Russian Formalism, probably all had an effect on his acknowledgment of the importance of language, especially dialogic interactions, in human thinking.

Vygotsky's treatment of the relationship between speech and thinking is extensive (see for instance Vygotsky, 1987a) and complex. He follows their developmental paths from phylogenesis to ontogenesis, comparing and contrasting the two domains. Due to space limitations and the focus of the present discussion, the emphasis will be on the more immediate context of social interaction (i.e. interpsychological plane), in which two actual people use speech, verbal or other modes, to communicate and construct meaning in the process of accomplishing a joint activity.

According to Vygotsky (1987a), speech, first and foremost, fulfills the communicative function. It is used to communicate meaning between two or more people. This notion of speech corresponds to the social primacy in all developmental processes within the Vygotskian framework. Speech, used in all its various forms (e.g. written, oral, gestural) in social interactions is internalized by the people communicating (Feigenbaum, 2002). Once internalized, speech, or rather 'inner speech' at this stage, begins to regulate thinking. Thinking processes involved in planning, self-regulation, and self-monitoring are all based on communicative processes that were once actually carried out between two or more people. Once again, Vygotsky provides a strong rationale for insisting on the dialogical nature of human consciousness (Bakhtin, 1981).

Activity and consciousness

A critical feature of the ZPD, one that goes beyond a simple social interactional interpretation of human development, is its specific focus on joint activity. The participants involved in the ZPD are not merely two individuals who happen to be in the same place at the same time. They are engaged in a collaborative activity oriented toward fulfilling a specific goal. As Levitin (1982) notes, human activity is distinguished by its nature to be goal-oriented. The zone itself is created on the basis of a need for collaboration and assistance in accomplishing a specific activity toward an established goal.

The interactions between the participants engaged in a joint activity lead to psychological development as the less competent individual internalizes the interactional patterns. The more competent individual, in turn, develops as well as the interaction also makes the features of activity more conscious and reflective. This mechanism of development underlies the argument of Burmenskaia (1997) that all

types of psychological development are possible only through activity. Daniels (2001) further notes that the influences between social activity and psychological phenomena are bidirectional, as it is their unity and their inseparable integration that allow each to influence the other.

The concept of the unity of activity and psychological phenomena extends to include the notion of cognition as distributed (Daniels, 2001; Salomon, 1993). Cognition and other psychological phenomena extend beyond the individual to include the multiple participants and cultural artifacts in shared activities. Within this perspective, the consciousness of the individual does not reside within his or her body. It is distributed across the setting, tasks, and other participants. A joint activity is accomplished via the multiple participants engaged in a specific setting with cultural resources afforded by the context. This leads to psychological development for everyone involved in the activity, which in turn make new levels of activities possible.

Clark and Chalmers (2016) offer examples of extended cognition in which an external entity (i.e. cultural resources) is coupled with the human mind to form a unified system in which each (i.e. the external entity and human mind, respectively) exert bidirectional influences on the other. One example the aforementioned authors give is of language, which is a central means by which cognitive processes are extended into the world. When a group of researchers sit around the table with their laptops, engaged in discussions to arrive at a solution to a problem they have identified, cognition does not reside merely inside the brain of any one human organism but extends through language to the entire group as well as the laptop.

Culture and nature

The continuous expansive cycle of development that has been identified throughout this section on explicating the dialectically unified concepts applies to the last pair as well. As Luria and Vygotsky (1992) noted, natural behavior becomes cultural when people internalize the cultural tools such as symbols and other meditational devices that are employed in social activities. However, in this process of internalizing cultural tools, people do not simply receive them in the original form. Rather, as many researchers have noted (e.g. Smolka, De Goes, & Pino, 1995; Tobach, 1995), humans not only appropriate and use the tools handed down to them by the culture in which they are immersed but in the process they transform the given tools and also create new ones.

The transition from natural to cultural forms of behavior does not constitute a linear sequential developmental path. Just as the intrapsychological plane itself has to be formed in the transformation from the interpsychological to the intrapsychological, the plane of cultural forms of behavior is a not a universal plane that exists in advance as a developmental endpoint. Within a Vygotskian framework, developing functions may not be specified and defined ahead of time predicated on the already developed. Although what has already developed influences the developing functions, the resulting new system operates in a way that is fundamentally different from the previous one. The new system is found on principles that fundamentally restructure and integrate the already existing with the newly emerging processes. This is why the transition from interpsychological to intrapsychological was termed 'genetic *transformation*.'

Reconceptualizing the zone of proximal development

As a concept that connects all of Vygotsky's ideas and thoughts regarding the 'moving inward' of psychological functions, (Bruner, 1987, 2004), the ZPD has been receiving continuous attention across diverse domains. Although widely researched and studied to date, the concept of the ZPD still holds much potential to be further developed. Basing the interpretation of the ZPD on what was explicitly formulated by Vygotsky, researchers, especially in the western part of the world, have tended toward a rather narrow definition of the concept (Moll & Whitmore, 1993). As noted before, Vygotsky left much unsaid about the ZPD. However, these gaps may be filled by relying on other intellectual sources that

formed the basis of Vygotsky's thinking. The following is such an attempt to broaden the conceptualization of the ZPD by filling in what Vygotsky has left unsaid.

Expanding the scope of social

As the origin of all forms of specifically human psychological functioning, it is important to understand what Vygotsky meant by the word 'social.' The most concrete definition of the ZPD, as outlined previously, provides an understanding of the social to be confined to dyadic interactions between two people (i.e. interpsychological). However, the social interactions of the individuals in the zone occur within larger contexts that involve institutional and historical dimensions. This is the basis that forms an argument for a broader definition of the term 'social' within the ZPD (Daniels, 2001; Wertsch, Minick, & Arns, 1984; Wertsch et al., 1993).

As Rogoff and her colleagues (1993) point out, the participation within the zone has a societal basis that goes beyond the immediate interpsychological level of functioning. More specifically, the intellectual tools, the patterns of discourse, the values and goals that are set within the zone are all determined by the larger institutional and historical setting. The more distal arrangements of the participants' lives (Packer, 1993), such as the formal cultural institutions of school and workplace, important historical events, and values and belief systems the individuals identify with, all affect what goes on in the zone.

Recognizing multiple voices

The task of broadening the concept of social may be enhanced by taking into account the notion of 'voice' within the ZPD. The definition provided by Vygotsky and outlined at the beginning of this paper posits two participants within the zone, namely that of the more competent and the less competent. The specific instantiation of each utterance by these participants is defined as his or her voice (Bakhtin, 1981). However, as each utterance is connected to previous utterances and is formed in anticipation of future utterances, there is an inaudible voice of the hidden interlocutor within the zone. Cheyne and Tarulli (1999) refer to the more competent participant's voice as the first voice, the voice of the less competent as the second, and the voice of the invisible and inaudible participant as the third voice.

This third voice may be defined as the larger context, such as the institutional and historical forces mentioned previously, that shape the social interactions between the first and second voices (Eun et al., 2008). Although the audible dialogic interactions are carried out between the first and second voices, the third voice is always present and exerts its power over the two voices. It defines the patterns of dialogic interactions, the tools employed by the participants, and the nature and goal of the joint activity in which the participants engage. Cheyne and Tarulli (1999) define the power of the third voice as an act of ventriloquism as the third voice speaks through the first voice of the more competent as he or she guides the interactions within the zone. Exerting its power to set the agenda of the zone, the third voice influences the entire flow of interaction within the zone.

Acknowledging conflicts and contradictions within the zone

The presence of the third voice may serve to explain why the ZPD may at times be a site of conflict and contradiction as well as of support and unanimity (Wells, 1999). As some researchers (e.g. Goodnow, 1987; cited in Cheyne & Tarulli, 1999; Gauvain, 2001) have pointed out, interaction in the zone may not always be a benign and beneficial process. For example, support can be deliberately withheld within the zone due to societal restrictions (Newman & Holzman, 1993). The less capable participants can in turn challenge these restrictions, thus turning the zone into a site where authority and power are questioned.

The motives of the more capable participant in the ZPD (Goodnow, 1993) also depend on the social structures and affordances. One may not always provide assistance and engage in collaborative activities with the goal of supporting and helping the less competent. The authoritative third voice may dictate the types of assistance allowed within the zone, in which case the first voice of the more competent has

no choice but to comply. This may be why not all forms of assisted performance and social interaction directly facilitate and lead to development (Tudge & Rogoff, 1989).

An example of the ZPD in which assisted performance did not lead to development is given by Eun and her colleagues (Eun et al., 2008). According to the authors, the interactions within the zone were constrained by the overarching third voice of high-stakes testing. The third voice of testing spoke through the first voice of teaching which resulted in teachers teaching to the test and the students striving to obtain passing scores.

Finally, as Packer (1993) points out, mastery, maturity, autonomy, and independence achieved within the zone are not without costs and losses. It means accepting, at least in part, the voices of those in power (Hatano, 1993) in regulating the formation of one's own consciousness. A culturally competent person becomes conscious and reflective of one's own image through the lens provided by the social others. Or, as Vygotsky (1997) argued, 'I am conscious of myself only to the extent that I am another to myself' (p. 77).

Integrating the multiple facets of human functioning

An integrated system of human functioning lies at the heart of all of Vygotsky's work. In a series of lectures on psychology (1987b), Vygotsky consistently maintained that what changes in the process of development, is not individual functions such as perception and memory, but their interrelationships within the development of the consciousness as a whole. In outlining the development of emotions, Vygotsky specifically pointed out the synthesis of affective and intellectual processes in development.

Building on Vygotsky's claims of interfunctional connections and relationships within an integrated system, researchers are beginning to consider the affective domain in addition to cognitive functioning (Daniels, 2001; Wells, 1999) within the ZPD. Interpersonal dimensions of the zone and affective dynamics (Stone, 1993) are receiving more attention as researchers attempt at creating emotional ZPDs (Newman & Holzman, 1993). In this process, it has been confirmed that it is not just the cognitive structures that become altered stemming from interactions in the zone. The entire system of human functioning, including the cognitive as well as the psychosocial and affective structures, changes (Litowitz, 1993). Therefore, the ZPD becomes a space where personality and identity are formed and restructured through a continuous cycle of internalization and externalization.

Conclusions

The main purpose of this paper was to present the zone of proximal development as a spatial and temporal metaphor that encompasses all of Vygotsky's thinking regarding human development. The relationship between the ZPD and the general genetic law of cultural development was outlined by exploring the central concepts of Vygotsky's theory. The theoretical foundation that unites the dialectically synthesized concepts is the 'moving inward' of all human mental functions from the social (i.e. sociogenesis).

Because Vygotsky lived and worked within a high-context culture (Ageyev, 2003), where writers do not provide detailed descriptions of constructs that are self-evident to themselves, he left out aspects of the ZPD that may have been obvious to himself, but nonetheless crucial in achieving a clear definition of the concept. Therefore, an attempt was made to reconceptualize the ZPD by going beyond the explicit definitions to include issues that are not directly addressed in Vygotsky's writings but may serve to enhance the understanding of the concept. The notion of voice and dialogicality, mainly borrowed from the works of the Russian semiotician Bakhtin proved useful in the reconceptualization.

The concept of voice allowed a broader understanding of the social to go beyond the dyadic interactions within the interpsychological plane to include the institutional and historical dimensions. The inclusion of multiple voices also explained the transformative power inherent in the transition from the interpsychological to the intrapsychological plane. Although the more competent participant may speak for the third voice (i.e. broader societal context including the historical forces) and try to impose the societal agenda within the zone, the second voice of the less competent can resist the efforts of the

first and third voices and in the process recreate the cultural context. This continuous and expansive cycle of internalization and externalization or appropriation and creation reflects the very nature of the Socratic dialog, whose aim is to arrive at a deeper understanding of what it means to live in this world as humans, by questioning, selectively accepting, recreating, and most importantly, 'co'-constructing meanings in collaborative efforts.

In lieu of concluding remarks, the final part of this paper will present remaining questions that need to be answered if the ZPD is to develop further as a concept that illuminates the process of human development. The first question deals with the complexities inherent in defining the zone. As discussed throughout this paper, without a detailed guidance from Vygotsky, it becomes extremely difficult to operationalize the ZPD as a working construct. Furthermore, considering the unevenness (Pacifici & Bearison, 1999), that is, the regressions as well as progressions in the developmental path of the ZPD, how can researchers achieve a clear-cut operationalization of this concept?

The second question is based on a commentary on internalization that Packer (1993) raises. He asks the following paradoxical question: If humans are inherently social in their origin, why should the outcome of development be an autonomous and independently functioning solitary individual? Should the goals of development not strive toward a socially oriented and interdependently functioning collective? Continuing this line of reasoning, Hatano (1993) called for creating a collective ZPD.

The next couple of questions relate to the mechanisms involved in the ZPD. With regard to the participants involved in the ZPD, Cole (1985) asks if the ZPD only relies on vertical transmission from adults to children or from more experienced to less experienced. Regarding the means of interaction, it becomes important to determine which types of interactions are most conducive to enhancing development. Is language the only effective means, as Bruner (1986) maintains, or are other forms of nonverbal means equally effective as other researchers (e.g. Newman, Griffin, & Cole, 1989) suggest? Although Vygotsky considered language to be the most important cultural tool, his conception of language may have been broad enough to include nonverbal and non-linguistic means of communication.

The final question deals with the issue of domain-specificity. If the ZPD is sensitive to differing domains, as some researchers (e.g. Brown & Ferrara, 1999; Gauvain, 2001) suggest, then how useful is this construct for deriving implications for development and learning in general? Would it be possible for researchers to even find common grounds on which to base their discussions of the ZPD when there is a ZPD for every domain of study?

These unanswered questions should serve as the goal of next phase of development as researchers further their attempts to understand the concept of ZPD. In a way, then, these questions form the zone of proximal development for the zone of proximal development. One thing should be clear from what is known about the ZPD. The new level of understanding, achieved by answering these questions, will not be the result of an individual effort. Rather, it will be accomplished through collaboration among many researchers via numerous joint activities across diverse domains of study. Furthermore, answers to these questions will serve as the beginning of the next phase of research as development is a continuous process. Borrowing from the concluding words of Rogoff's (2003, p. 369, italics in original) book on human development, *there is always more to learn*.

Disclosure statement

Notes on contributor

Barohny Eun is an instructor in the Department of Asian and Middle Eastern Studies at Duke University. Her research focuses on implementing classroom practices based on Vygotsky's sociocultural theories. Most Recent Relevant Publications: Eun, B. (2016). Equipping every student with psychological tools: A Vygotskian guide to establishing the goals of education. *European Journal of Psychology of Education, 31*(4), 613-627; Eun, B. (2016). The Culturally Gifted Classroom: A Sociocultural Approach to the Inclusive Education of English Language Learners. *Educational Psychology in Practice*, *32*(2), 122-132; Eun, B. (2016). Bringing Vygotsky and Bakhtin into the Second Language Classroom: A Focus on the Unfinalized Nature of Communication. *The Journal of Language Teaching and Learning, 6*(1), 114-125.

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