Vygotskian socio-cultural theory and globalization: Implications for educational research

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Abstract
Sociocultural theory of mind was conceived by Soviet psychologist, Lev Semyonovich Vygotsky (1978, 1981a, 1981b) in the early 1920s. The theory emphasizes the central role of social relationships and culturally constructed artifacts in organizing thinking. It attempts to ‘theorise and provide methodological tools for investigating higher cognitive processes by which social, cultural, and historical factors shape human functioning’ (Daniels, 2001, p. 1). Sociocultural theory is one theory of subjectivity. Arguably its main contribution is to provide a conceptual framework for (re)conceptualizing relations between humans and their sociocultural context. It continues to be widely used in educational research.

In the last two decades communicative globalization has transformed the terrain of theorization, empirical research and educational practice. David Held and his collaborators define globalization as ‘the widening, deepening and speeding up of worldwide interconnectedness’ (Held et al., 1999, p. 2). It is vectored by more extensive and intensive cross-border flows of people, communications, knowledge, ideas, government policies, and money (Appadurai, 1996), the global referencing of nation-states and the national education systems that hitherto have framed educational research, and the growing weight of world culture and society. Education is shaped simultaneously in global, national and local dimensions of action (Marginson and Rhoades, 2002). This has implications for ‘context’ in Vygotskian theory. Context is more complex and multiple, more fluid and volatile, and more blurred. This suggests the need to reconsider and perhaps expand on Vygotskian sociocultural theory and its applications in educational research.

This paper considers the implications of globalization for Vygotskian theory, and the potential of Vygotsky and the later sociocultural activity theory for studies of globalization, especially Arjun Appadurai’s (1996) reading of global cultural flows, Rizvi and Lingard (2010) and Marginson (2010a and 2010b) It discusses globalization and its implications for education, Vygotsky and sociocultural theory, and the globalization/Vygotskian interface. The Vygotskian emphasis on mediating artifacts provides an additional pathway for empirical research on globalization. In the context of globalization, educational research in the Vygotskian sociocultural tradition should embrace the multidimensional character of educational action, move beyond national boundaries in examining socio-historical level, and adopt a notion of human subjects with a larger scope for imagining, learning and changing.
Introduction

[Dang Thi Kim Anh] Let me start by sharing some stories about my six-year-old daughter Hong Anh, who was born in Hanoi in Vietnam and is currently living in Melbourne, Australia. Hong Anh reads Doraemon books, a Japanese manga, in Vietnamese. She watches Doraemon cartoons, sometimes in Vietnamese, sometimes in English, and surprisingly sometimes in Japanese, though she can speak just a few Japanese words. She plays language games on www.starfall.com, an American website for teaching English to children, and www.socnhi.com, a Vietnamese website for Vietnamese children. She plays on www.mathletics.com, a website to teach Maths for primary school children in many countries in the world. She uses Skype computer software to see and talk to our other family members in Vietnam, and my friends in other cities in Australia and other parts of the world. Hong Anh now dreams of going to the Disneyland in Japan, not in the US, because we are living with a Japanese woman. Sometimes she uses some strange body language and explains that she copied it from the American High School Musical. She is friends with some Pakistani children, who are Catholic. One day she came home and asked me: “Mum, do you know who Jesus is? Do you know who his Mother is?” And she said “Cool” when I could reply to her questions. Then she followed with another question: “Mum, how do you know?” This is because our family is Buddhist. And at the same time, Hong Anh begged me: “Mum, I want you to go back to Vietnam to celebrate the Tet holiday (Vietnamese New Year) with me”.

Another day, Hong Anh suddenly asked me, to my amazement: “Am I Australian?” I assured her: “You are Vietnamese”. She then corrected: “No, I am half Australian”. And I challenged: “Why do you think so?” She replied: “Because I can speak English”.

My daughter’s world is starkly different from my world at her age. Her subjectivity, identity and imagination are unprecedented when compared with her parents and grandparents. Her stories vividly illustrate aspects and influences of globalization. Her cross-cultural encounters are much more diverse than in previous generations. As much as I would like to discuss early childhood development, here we reflect on globalization and educational theory. Just as globalization has an immense impact on my daughter’s subjectivity, so it is transformative in relation to educational research, and theorizing about learning and subjectivity. The paper considers the implications of globalization for Vygotskian sociocultural theory, while also discussing the potential of Vygotskian theory for studies of globalization.

The paper

[Both authors] The paper begins by reviewing globalization and its multi-dimensional implications for educational context, interpreting globalization primarily through the lens of Arjun Appadurai’s work on global cultural flows, which has influenced others (for example Marginson, 2010a and 2010b; Rizvi and Lingard, 2010). This is followed by an overview of Vygotskian sociocultural theory, including activity theory and the third generation theory of expansive learning. The next two sections consider where Vygotskian theory can be useful in mapping global trends and convergence in education, and where it might be supplemented, corrected or otherwise developed in the light of globalization. The concluding section makes suggestions about implications for educational research.
Globalization raises many issues and problems for educational practice and research. This paper is not intended to discuss such issues as the implications for access and equity, or language policy and practice, or international education. Rather, it confines itself to an overview of global transformations and the implications of these changes for Vygotskian theories of learning and the mind.

Globalization and education

Globalization

David Held and his collaborators define globalization as ‘the widening, deepening and speeding up of world wide interconnectedness in all aspects of contemporary social life’ (Held et al., 1999, p. 2). They argue that contemporary processes of globalization are ‘historically unprecedented’ (p. 7) and ‘a product of unique conjuncture of social, political, economic and technological forces’ (p. 429).

Arjun Appadurai finds that globalization is manifest in ‘a complex, overlapping, and disjunctive order’, not a linear process (Appadurai, 1996, p. 32). It is characterized by fundamental disjunctures between global flows in the realms of economy, culture, technologies and politics (Appadurai, 1999). There have been such disjunctures before in human history but ‘the sheer speed, scale, and volume of each of these flows are now so great that the disjunctures have become central to the politics of global culture’ (Appadurai, 1996, p. 37). Again, while contemporary global flows have antecedents, they are seen is unprecedented in certain respects.

Appadurai notes that the cultural transactions between different social groups had always been restricted by the facts of geography and ecology (Appadurai, 1996, p. 27). This has changed. ‘Electronic mass mediation and transnational mobilization have broken the monopoly of autonomous nation-states over the project of modernization [hence globalization]’ (p. 10). Appadurai proposes a framework for exploring globalization by examining the relationship among five dimensions of global cultural flows: ethnoscapes, mediascapes, technoscapes, financescapes, and ideoscapes (p. 33). As he sees it globalization is driven by growing cross-border flows of people (ethnoscapes), communications and knowledge (mediascapes), ideas (ideoscapes), technologies (technoscapes), government policies, and money (financescapes) (Appadurai, 1996; Marginson, 2010a). Rizvi and Lingard (2010) suggest an extra global ‘scape’, policyscapes, in their study of educational policy.

Communications and technologies together include media, and since the 1990s, the Internet, which ‘sustains a global system of communications and data transfer, a single worldwide library of information and brings us into closer encounters with people from other cultures’ (Marginson, 2009, p. 6). The Internet also helps to create worldwide open source knowledge which appears to be growing much faster than world markets (Marginson, 2010a, p. 122). The cheapening of travel and the greater mobility of people across borders in migration, business, work, education, tourism and family life also contribute to global convergence (Marginson, 2009). Global communications, media, business and knowledge are accelerating the worldwide spread of English as a medium of international communication, tending towards a one-world cultural space (Held et al., 1999; Marginson, 2010b, 2010c).
Space, time, and territoriality

Globalization creates a new experience of the spatio-temporal, space and time (Held et al., 1999; Marginson, 2010a). Rizvi and Lingard refer to ‘the compression of time and space’ in the context of globalization (2010, p. 66). In previous centuries cultural relations between socially and spatially separated groups were bridged only at great cost and maintained over time with great effort (Appadurai, 1996). Now, with electronic messaging, such contact is immediate, easy and relatively cheap. The concept of time-space compression is associated with ‘historically unprecedented extensity, intensity, velocity, and impact propensity of global flows, interactions and networks embracing all social domains” (Held et al., 1999, p. 429). Spatio-temporal change suggests ‘a transformation in the organization of human affairs by linking together and expanding human activity across regions and continents’ (ibid, p. 15). This leads to a new conceptualization of territoriality.

Here territoriality is referred to as ‘deteritoriality’ (Appadurai, 1996; Held et al., 1999), a state of political and economic borderlessness; and ‘reterritoriality’, a process of remapping territory/borders (Held et al., 1999). Borderlessness is engendered by satellite and other telecommunications technologies that span beyond nation-state control (Held et al., 1999). The idea of deteritorialization is applied not only to obvious examples like the border-crossing of corporations but also to flows of people, ideas, knowledge, images and political formations which transcend specific territorial boundaries. According to Appadurai (1996) the deteritorialization of different aspects of social life and identity transforms the reproduction of culture. This is closely linked to the human imagination.

Imagination as social practice

For Appadurai the images in the global landscape of ethnoscapes, mediascapes, technoscapes, financescapes and ideoscapes are ‘building blocks’ of ‘imagined worlds, that is, the multiple worlds that are constituted by the historically situated imaginations of persons and groups spread around the globe’ (Appadurai, 1996, p. 33). Within this landscape are different streams, ‘transnational cultural flows’ (p. 49) along which cultural material is moving across national boundaries.

Globalization means that people’s imaginations are not confined by their local cultural or national territorial boundaries. ‘More persons throughout the world see their lives through the prisms of the possible lives offered by mass media in all their forms. That is, fantasy is now a social practice, it enters, in a host of ways, into the fabrication of social lives for many people in many societies… ordinary lives today are more often powered not by the givenness of things but the possibilities that the media … suggest are available’ (Appadurai, 1996, p. 54 and p. 55, emphasis added). Drawing on more resources for imagining, from both the immediate and distant contexts, people enjoy an expanded agency freedom and power to create. Appadurai argues that ‘many persons on the globe live in such imagined worlds… and thus are able to contest and sometimes even subvert the imagined worlds of the official mind and of the entrepreneurial mentality and surround them” (ibid, p. 33).

In sum, globalization is transforming space, time, border and territory. It combines changes in all aspects of social life, including the process of cultural reproduction and
the agency freedom accessed by persons. Globalization challenges our understandings of context in two senses. First, the socio-cultural-economic-political context. Second, the context of the mind, the imagination or imagined lives of individuals. Context has become more complex and multiple, more fluid and volatile, and more blurred. Context has expanded beyond the border of any one nation.

**Implications of globalization for education**

‘Few areas of social life escape the reach of processes of globalization’ (Held et al., 1999, p. 27). The growing impact of globalization on formal and informal education is inevitable. Rather than confined to its local or national boundaries, education is shaped simultaneously in global, national and local dimensions of action (Marginson and Rhoades, 2002). Globalization has transformed the terrain of theorization, empirical research and educational practice.

Neither nations or institutions can ‘completely seal themselves off from global effects’ (Marginson and van der Wende, 2009, p. 20). Like Appadurai’s ‘scapes’ there are informal global systems in education that operate across national borders and directly impact the thinking and work of educational institutions and individuals. Such global systems are especially influential in higher education (Marginson, forthcoming; Marginson and van der Wende, 2009). The global flow of knowledge and research; the cross-border mobility of students and educators, and protocols for recognition and mobility between institutions; the international standards systems (King, 2010); global comparison, comparisons, bench-marking and ranking; and the internationalization of institutions (Marginson and van der Wende, 2009) speed up the effects of globalization in institutions everywhere. In higher education there is also a partial disembedding of educational institutions from national governance, in that institutions source part of their information, ideas, research knowledge, people and educational capital from beyond national regulation. Though the nation retains a greater supervisory control over what happens in schools, teachers and their students are nevertheless directly colonized by global media, ideas and products. At the micro level, globalization can have a tremendous impact in individual learning and subjectivity at any level of schooling or higher education, in any country.

At the macro policy level, globalization is associated with global referencing by the national education systems. Increasingly they are influenced by comparisons of own system performance with those of other nations, and examples of educational practice elsewhere. There is a global trend to partial convergence of educational policies (Rizvi and Lingard, 2010). Global organizations including the World Bank, Asian Development Bank (ADB) and Organization for Economic Cooperation and Development (OECD) cajole, influence and direct nations towards a predetermined social imaginary and globalized policy discourses (Rizvi and Lingard, 2010).

Appadurai holds that ‘the loosening of the holds between people, wealth, and territories fundamentally alters the basis of cultural reproduction’ (1996, p. 49, emphasis added). As social practice, education is closely involved in cultural reproduction. Changes in that domain directly affect education. The effects are also reciprocal: the part globalization of education feeds back into cultural reproduction. Given the cross-border relationships and effects, the enhancement of the role of the imagination and the larger potential of agency freedom, educational contexts are no longer confined to immediate specific physical
locations in time and space. As the case of Hong Anh shows, learning readily leaps across local or national borders.

Given its unprecedented implications for education, globalization has generated new theoretical and methodological approaches to educational research. Marginson and Rhoades (2002) propose a glonacal (global-national-local, glo-na-cal) model for comparative research in education. Because education is shaped simultaneously in global, national and local dimensions of action, education research should adopt a comprehensive approach, accounting for the multi-faceted impact of globalization in all three dimensions. The ‘glonacal agency heuristic’ notes that ‘at every level—global, national, and local—elements and influences of other levels are present. A glonacal agency approach leads us to trace these elements and domains’ (Marginson and Rhoades, 2002, p. 290). Rizvi and Lingard (2010) call for a “historical orientation to policy analysis” (p. 69, italics in original). They argue against seeing ‘policy problems’ in their immediate context, both in spatial and temporal frames. A given education policy should be located in the context of ‘the policy ensemble of which it might be a part’ including the temporal and spatial frames and the broader discursive policy settlements and social imaginaries at work (p. 69). We have described global context as complex and multiple, fluid, volatile, and blurred. The two models offer methodological frameworks that help to capture these qualities.

It is interesting however that despite its continuing and growing popularity in educational research, sociocultural theory—which was originally conceived by Vygotsky and his colleagues at another time of rapid social change in Soviet Russia, in the 1920s and early 1930s after the 1917 revolution (Daniels, 2001)—has yet to be applied to research into globalization processes in education. Sociocultural theory provides a conceptual frame for studying changing subjectivities in the light of relations between humans and their sociocultural context. Does the theory allow us to say more of globalization? Does globalization suggest a revision or extension of the theory? We turn now to those questions.

**Sociocultural theory**

Vygotskian theory has roots in classical German philosophy from Kant to Hegel, and was influenced by the writings of Marx and Engels. Lev Semyonovich Vygotsky career as a psychologist lasted only from 1924 till his death from tuberculosis at the age of 37 in 1934 but in that time he carried out an extensive research program, produced several major works in what became known as sociocultural theory, and founded a continuing school of Soviet psychology. This school included A. N. Leont’ev (or Leontiev), who founded sociocultural activity theory on the basis of his reading of Vygotsky, and Alexander Luria (Engeström, 1999, pp. 19-20). Vygotsky’s thought and sociocultural theory have become increasingly influential outside Russia. Yrjo Engeström in Finland has led the development of a third stage of Vygotskian theory, with Engeström and collaborators carrying out studies in what has been designated ‘expansive learning’ (see below).

**The subject/society dialectic**

Vygotsky eschews all naturalistic explanations of subjects and social relations. In contrast with Piaget, who specifies universal biologically mandated stages of child
development, Vygotsky models the formation of the child as a continuing dialectical interaction between biological and sociocultural factors. These ‘different lines’ are ‘interlaced’ at each stage (Vygotsky, 1978, p. 123). The cultural factor enables the capacity for self development that enables humans to remake their conditions of existence. ‘The process of the historical development of human behaviour and the process of evolution do not coincide; one is not a continuation of the other’ (Vygotsky in ‘The development of the higher psychological functions’, 1960, cited in Cole and Engeström, 1993, p. 4).

In turn the contextual sociocultural dimension interacts with subject formation. Again the process is seen by Vygotsky as dialectical, the dialectic of subject/society:

In sociocultural theory the emphasis is on semiotic mediation with a particular emphasis on speech. In activity theory it is activity itself which takes centre stage in the analysis. Both approaches attempt to theorise and provide methodological tools for investigating the processes by which social, cultural and historical factors shape human functioning. Neither account resorts to determinism in that they both acknowledge that in the course of their own development human beings also actively shape the very forces that are active in shaping them (Daniels, 2001, p. 1).

The subject/society dialectic plays out in the active relations between subject and the interpersonal setting. ‘Human beings do not merely react to their life conditions but they have the power (p. 2) to act and therefore the power to change the very conditions that mediate their activities’ (Roth 2004, pp. 1-2). Of course this power is not infinite; and humans adjust themselves, their desires and their activities to fit the circumstances in which they find themselves, as Vygotsky notes in relation to child development: ‘Needs do not exist independently of adaptation’ (1978, p. 77).

Vygotsky emphasizes ‘the dominant role of social experience in human development’ (Vygotsky, 1978, p. 22). He concludes from his empirical research that social relations come first, preceding the emergence of the personality. The child’s earliest speech is designed to make contact with others, to join the social conversation. Out of the experience of speech community the mentality of the child is subsequently patterned. ‘The true development of thinking is not from the individual to the social, but from the social to the individual’ (Vygotsky, 1986, p. 36).

An interpersonal process is transformed into an intrapersonal one. Every function in the child’s cultural development appears twice: first, on the social level, and later, on the individual level (Vygotsky, 1978, p. 57, emphasis in original).

Any higher mental function was external because it was special at some point before becoming an internal, truly mental function. It was first a social relation between two people. The means of influencing oneself were originally means of influencing others or others’ means of influencing an individual’ (Vygotsky, 1981b, p. 162).

In this theorization mentality rests on collective social relations, an insight that is in sharp contrast to the assumptions governing much of Western psychology. Leontiev remarks: "Consciousness is co-knowledge", as Vygotsky loved to say… Vygotsky always insisted that neither consciousness nor meaning underlies life; rather, life underlies consciousness” (Leontiev, 1981, p. 56 and p. 57).
Mediation by artifacts

Vygotskian theory emphasizes the central role that social relationships and culturally constructed artifacts, including tools and signs, play in organizing human forms of thinking and development. ‘Human behaviour is not simply called forth by stimuli’, nor governed entirely from within, but is mediated by externalized artifacts ‘that are created to prompt or modulate action’ (Bakhurst, 2009, p. 199; see also Engeström, 1999, p. 29). Physical and psychological tools not only are used by humans to change the environment, but also in this process help humans transform and master themselves (Vygotsky, 1981a). In this manner, in sociocultural theory, mediation plays a key role in regulating the relationship between the subject and the sociocultural setting; while also underpinning the socio-cultural account of self-determining human agency. ‘Mediated activity simultaneously modifies both the environment and the subject’ (Cole and Engeström, 1993, p. 9). The concept ‘opens the way for the development of a non-deterministic account in which mediators serve as the means whereby the individual acts upon and is acted upon by social, cultural and historical factors’ (Daniels, 2001, p. 14).

According to Vygotsky (1978, 1981a), tools, signs, and artifacts are stimuli, or mediators, for humans to master higher mental processes. They are the means humans use to act upon their external and internal world. Examples of psychological tools include ‘language, various systems for counting; mnemonic techniques, algebraic symbol systems; works of art; writing; diagrams, maps, and mechanical drawings; all sorts of conventional signs; etc.’ (Vygotsky, 1981a, p. 137). The nature of the tools changes according to the cultural development of society (Vygotsky, 1978, p. 8). In Mind in Society (p. 40) he summarizes mediation in diagrammatic form. S is the primary stimulus. Mediation, the ‘X’ factor, is the auxiliary or secondary stimulus deployed by the subject to secure the respose (R).
This triangular schema became translated by later post-Vygotskian activity theory from Stimulus-Response-Mediation into a Subject-Object-Mediation relationship.

The first example given by Vygotsky is that of a person who ties a knot in their handkerchief to remember something. The handkerchief is a mediating tool.

The very essence of human memory consists in the fact that human beings actively remember with the help of signs. It may be said that the basic characteristic of human behaviour in general is that humans personally influence their relations with the environment and through that environment personally change their behaviour, subjugating it to their control. It has been remarked that the very essence of civilization consists of purposely building monuments so as not to forget. In both the knot and the monument we have manifestations of the most fundamental and characteristic feature distinguishing humans from animal memory (Vygotsky, 1978, p. 51).

Another simple example is that of the ‘to do’ list, which the person uses as a means of mastering time and self-will. Vygotsky refers to psychological artifacts as social and artificial formations, rather than organic and individual (1981a). Vygotsky repeatedly emphasizes the role of mediation in developing self-determining human agency (he uses the term ‘active adaptation’: Vygotsky, 1981b, pp. 151-152).

In the higher forms of human behaviour, the individual actively modifies the stimulus situation as part of the process of responding to it’ (Vygotsky, 1978, p. 14).

Because this auxiliary stimulus possesses the specific function of reverse action, it transfers the psychological operation to higher and qualitatively new forms and permits humans, by the aid of extrinsic stimuli, to control their behaviour from the outside. The use of signs leads humans to a specific structure of behaviour that breaks away from biological development and creates new forms of a culturally-based psychological process (Vygotsky, 1978, p. 40).

The person, using the power of things or stimuli, controls his own behavior through them, grouping them, putting them together, sorting them. In other words, the great uniqueness of the will consists of man having no power over his own behavior other than the power that things have over his behavior. But man subjects to himself the power of things over behavior, makes them serve his own purposes.
and controls that power as he wants. He changes the environment with the external activity and in this way affects his own behavior, subjecting it to his own authority. (Vygotsky, 1997, p. 212)

Vygotsky distinguishes between tool and sign. They have mediating activity in common, but one changes the object while the other changes the subject (Vygotsky, 1978, pp. 52-54). ‘The sign acts as an instrument of psychological activity in a manner analogous to the role of a tool in labour’ (Vygotsky, 1978, p. 52). The difference is ‘the different ways that they orient human behaviour’. The tool is ‘externally oriented; it must lead to changes in objects. It is means by which human external activity is aimed at mastering, and triumphing over, nature’. In contrast the sign is ‘internally oriented’. It is ‘a means of internal activity aimed at mastering oneself. These activities are so different from each other that the nature of the means they use cannot be the same in both cases’ (Vygotsky, 1978, p. 55).

**Genetic method**

A key tenet of Vygotsky is his assumption that all phenomena, including humans and their social relations, are continually in motion and undergoing change and development. He developed a schema for modeling human behaviour and cognitive development. As we inherit cultural artifacts from our ancestors, who in turn inherit these artifacts from their ancestors, Vygotsky reasoned that the only adequate approach to the study of higher mental abilities was historical (Lantolf, 2000).

The cultural environment into which children are born contains the accumulated knowledge of prior generations. In mediating their behaviour through these objects, human beings benefit not only from their own experience, but from that of their forebears... Cultural mediation implies a species-specific mode of developmental change in which the accomplishments of prior generations are cumulated in the present as the specifically human part of the environment; culture is, in this sense, history in the present (Cole and Engstrom, 1993, p. 9)

He agreed with Blonsky that ‘behaviour can only be understood as the history of behavior’ (Vygotsky, 1981a, p. 141). Blonsky’s genetic analytic approach to studying human behavior states that ‘everyday human behavior can be understood only by disclosing the presence of four general fundamental genetic stages through which behavioral development passes’ (Vygotsky, 1981b, p. 156). Vygotsky considers this unified genetic scheme as embracing both everyday human behaviour and the history of its development. He coined the term ‘genetic method’ (Vygotsky, 1981, cited in Lantolf and Appel, 1994; Cross, 2006). Vygotsky proposed four genetic domains for the proper study of higher mental functions: the phylogenetic domain, sociocultural domain, ontogenetic domain, and microgenetic domain (Lantolf, 2000). Coles and Engeström (1993) represent the relationship between these domains in the following diagram (Figure 2):

*Figure 2. Sociocultural theoretical domains of genetic analysis*
Cross (2006) provides an explanation of these domains as follows:

The phylogenetic domain concerns the nature of human development as a ‘natural’ species over the course of evolution; that is, the biological basis for human development. In contrast, the cultural-historic [sociocultural] domain is concerned with the development of the ‘external’ world within which human activity unfolds; that is, the social, cultural, and historic basis for development. The third domain, ontogenesis, therefore, shifts the focus...to an understanding of the development of ‘the human’ across an individual lifespan [as they mature]...The microgenetic domain...focuses on specific, momentary fragments of development (p. 88-90).

This schema models the nature/culture and subject/society dialectics as the respective interactions of (1) the phylogenetic and cultural-historic domains and (2) the cultural-historic and ontogenetic domains. There is also space for bounded studies into particular moments or sites of development in the microgenetic domain, which is positioned within the larger coverage of the other domains. The intention of genetic theory is wholistic, but it also allows room for new insights to emerge. The schema provides the basis for comprehensive empirical studies into human development. At the same time, though, there is a danger of these structures becoming overly determinist in the hands of scholars less open and flexible than Vygotsky—for example if the first three domains are ranked hierarchically in relation to each other. Engeström suggests that genetic studies should be one part of the research program, distinguishing these from bounded empirical studies:

One type of analysis is historical-genetic; it seeks to explain the situation by tracing its origins and evolution. Another type of analysis is actual-empirical; it seeks to explain the situation by constructing a picture of its inner systemic relations.”
(Engeström and Sannino, 2010, p. 7)
Care must be taken to avoid giving priority to the ‘actual-empirical’ over the ‘historical-genetic’ despite the fact that it is more difficult to observe the latter.

**Openness and non-linear change meet bounded empirical inquiry**

In his account of cognitive development Vygotsky emphasized that evolutionary progression is combined with non-linear moments or ‘leaps’ in development. This is again consistent with the Hegelian method:

> Our concept of development implies a rejection of the frequently held view that cognitive development results from the gradual accumulation of separate changes. We believe that child development is a complex dialectical process characterized by periodicity, unevenness in the development of different functions, metamorphosis or qualitative transformation of one form into another, intertwining of external and internal factors, and adaptive processes which overcome impediments that the child encounters. Steeped in the notion of evolutionary change, most workers in child psychology ignore those turning points, those spasmodic and revolutionary changes that are so frequent in the history of child development. To the naive mind, revolution and evolution seem incompatible and historic development continues only so long as it follows a straight line. Where upheavals occur, where the historical fabric is ruptured, the naive mind sees only catastrophe, gaps, and discontinuity. History seems to stop dead, until it once again takes the direct, linear path of development (Vygotsky, 1978, p. 73)

‘Revolution and evolution … (are) two mutually connected forms of development that presuppose one another’ (Vygotsky, 1981b, p. 150). Likewise human societies undergo periods of gradual evolution interlaced with relatively sudden qualitative transformations.

Vygotsky was an empirical social scientist as well as theorist. His theorizations are closely attuned to the purposes and also the outcomes of his research program. Theorization and empirical research are in a continuing reciprocal relationship. But the research does not set limits on his capacity to imagine new theory. He achieves openness by refusing to impose the intellectual structures of particular bounded inquiries, on all possible inquiry. He does not make methodology into dogma.

All empirical methods involve some kind of closure. Systematic observation and analysis must have boundaries and must limit the number of active variables. Empirical methods are limited but also powerful; their power derives from their heroic simplification; the way they combine a particular idea or insight with concentrated focus. The boundaries and limits make it possible to concentrate the particular empirical inquiry, in the manner of the coiled spring within the larger mechanism. The question is how to secure the particular explanatory benefits to be derived from the particular empirical inquiry—and indeed the benefits of all the empirical inquiries within the overall research program, which may be heterogeneous to each other—without paying the cost. Engeström describes the problem as follows, when referring to post-Vygotskian activity theory:

> … how can we depict the cell of activity theory or, more specifically, what would be a viable way of modeling the structure and dynamic relations of an activity system? … [and] how can we incorporate historicity and developmental judgment into activity-theoretical analyses, yet take fully into account the diversity and multiplicity inherent in human activities?’ (Engeström, 1999, p. 28).
The Vygotskian genetic method combines bounded inquiry with an open theoretical horizon. (Note that this is analogous to, though not specifically derived from, the combination of linear historical change and open/non linear change. Both combine structure with openness). This enables him to pursue a series of inquiries along similar lines, enabling a large-scale data set to be created across diverse cases, and encompassing multi-voices. At the same time the chosen empirical method is always seen as purpose built: contingent, historically nested. It is not the last word in potential research programs—it does not block recognition of non linear changes, or the modeling and investigation of other kinds of bounded processes with different structures and dynamics to the first set of inquiries. Thus Vygotsky avoids the kind of overall intellectual closure that would disable the potential for new observations, ideas and theorizations elsewhere within the overall intellectual program.

The genetic method is one solution to this need to be empirically bounded, comprehensively explanatory and theoretically open all at the same time.

**Activity theory**

After Vygotsky the principal development in the sociocultural theory tradition was activity theory, led by Leontiev. For Leontiev activity is ‘the substance of consciousness’ (Bakhurst, 2009, p. 198). Activity is understood as closely associated with mental formation, including the development of knowledge. ‘Neither the external world nor the human organism is solely responsible for developing knowledge about the world… [Activity theorists] argue that the key to the process is the activity in which the human agent engages’ (Wertsch, 1981, p. 38).

Leontiev and his colleagues reformulated Vygotsky’s S-R-X triangle (stimulus-response-secondary stimulus or mediating artifact, Figure 1) into a new triangle of subject-object-mediating artifact (contained in the top section of the triangles in Figure 3). This shifts Vygotsky’s preoccupation with changes within the subject—from stimulus to response—to a primary focus on material activity within the world and the interaction between object and society. By engaging with reality we [p. 203] transform nature by lending it meaning. The world we confront in perception ceases to be a brutal external reality and becomes a space of significance and value. The results of our activity stare back at us with meaning and this creates new needs and desires, engendering further activity that further transforms the world, which then confronts us with new demands and opportunities … It is not just that the things we create are charged with identity; all objects we confront are meaningful for us in virtue of their relationship to human activity. Our relation to the world is normative or rational from the outset; that is, the world is a space of reasons for belief and action and to be a thinking thing is just to have the capacity to navigate such a space. That capacity in turn is not innate, but is nurtured and sustained through Bildung or enculturation… human beings are thus essentially social creatures because they owe their very status as minded beings, as persons, to their appropriation of culture. … the concept of activity… is the key concept that explains both the emergence of the world as a possible object of thought through the objectification of significance and the emergence of our mental powers, which consist in a certain mode of active engagement with reality (responsiveness to reasons) and which develop in each individual through her appropriation of the specific modes of activity of her community, through initiation into a form of life’ (Bakhurst 2009, pp. 202-203).
and subject. The idea this has in common with Vygotsky is that of mediation through tools or other artifacts.

In a summary of activity theory Bakhurst notes that it has taken differing forms inside and outside Russia. The Russian founders saw activity theory as a way of addressing philosophical problems of mind in the context of the social and cultural; using the concept of activity to explain such matters as the nature of consciousness (Bakhurst 2009, p. 197 and p. 202). According to Ilyenkov, ‘activity is a precondition of the very possibility of mind’ (Bakhurst, 2009, p. 202). Western theorists developed empirically applicable models of activity systems.

After Leontiev the further developments in activity theory can be summarized as the formal modelling of subject-object relations in context (second generation activity theory, left half of Figure 3), and the modelling of relations between different sites of activity (third generation, see whole of Figure 3).

Wertsch (1981) summarizes the main points of activity theory as follows. First, activity is analyzed at three levels: activity, action and operation. An activity is undertaken by a community. It has both object and motive and is distinguished on the basis of motive. It employs a division of labour, and various means of production. An action is conducted by an individual or group to fulfill a goal: actions are distinguished from each other on the basis of their respective goals (Bakhurst 2009, pp. 199-200, after Leontiev, 1981). An operation is the means whereby an action is carried out: operations are distinguished from each other on the basis of the specific conditions under which they occur (Leontiev, 1981, pp. 62-63). Second, there is emphasis on goal-directed processes. Third, activity is mediated by tools or artifacts created by humans to manage their activity, their world and themselves (see above). Fourth, activity theorists use developmental or genetic explanations. Fifth ‘human activity and the means that mediate it have arisen through social interaction’. Sixth, activity is typified by a process of internalization. In the case of child development, activities are initially carried out by the child on the external plane and then internalized. The history of social interactions builds an inner, mental life as Vygotsky stated. ‘Internalization is concerned with the ontogenesis of the ability to carry out socially formulated, goal-directed actions with the help of mediating devices’ (Wertsch, 1981, p. 32). Much of this is from Vygotsky but activity theory has added the emphasis on goal-directed activity and the distinctions between activity, action and operations. Note that in activity theory the subject’s goals are not fixed but tend to change over time, in a reflexive process.

In contrast with actions—mostly localized and short-lived—‘when activities become institutionalized, they are rather robust and enduring’. Once they gain the status of cultural practices, they often have radically longer half-lives than an individual goal-directed action’ (Cole and Engstrom, 1993, p. 8). Held and colleagues (1999) use the same term, ‘institutionalization’ to discuss entrenchment of ongoing global systems and effects.

In modeling its empirical inquiry, activity theory supplements Vygotsky’s diagram of subject-object relations with a model of an activity system that incorporates selected contextual elements, including rules, community and division of labour (see the activity systems in Figure 3 below). The second generation diagram allows activity theorists to extend the explanatory power of the model. This has been the basis for numerous empirical studies of mediated activity. At the same time, there are dangers in the
approach. Contextual factors can only be understood as complex and historicized social ensembles. As such they are different in kind to the bare elements of stimulus, response and mediation set down in Vygotsky’s original triangular diagram in Figure 1, and the abstraction of subject-object-mediation in first generation activity theory. In the real world, ‘rules’ and ‘division of labour’ are subject to many changes, some unpredictable. The second generation diagram runs the risk of reifying sociocultural context and cutting off the open potential for new developments originally suggested by Vygotskian genetics, in which the bounded empirical inquiry is always relativized by the potential for contextual change.

**Expansive learning and networks**

The ‘third generation’ of theory ‘examines the relations between activity systems and addresses issues of representation, voice, emotion, identity, and difference, issues neglected by the earlier theorists (Bakhurst, 2009, p. 200). The most important move has been to incorporate multiple activity systems. The activity theory triangle is suggestive, a powerful shaper of empirical inquiry, but reifies action as individual (or single collective organizational) action. It occludes the linkages between different active subjects. As Engeström puts it: ‘it does not fully explicate the societal and collaborative nature of my actions… it does not depict my actions as events in a collective activity system’ (Engeström, 1999, p. 30). Engeström has developed the following model of a distributed activity system (Figure 3):

![Figure 3. Third generation activity theory model of two interacting activity systems](image)


In the Vygotskian spirit Engeström argues against the notion of closed activity systems modeled exhaustively in linear terms. For example:

2 [Note by SM only] A question arises here about the potential for heterogeneity between activity systems. What degree of homogeneity of the elements in the triangles, including composite elements such as ‘community’ and ‘division of labour’, is needed to ensure that they can be modeled as part of a combined set?
... closer analysis of apparently unchanging activity systems reveals that transitions and reorganizations are constantly going on within and between activity systems as a fundamental part of the dynamics of human evolution. Consequently, activity systems are best viewed as complex formations in which equilibrium is an exception and tensions, disturbances, and local innovations are the rule and the engine of change. When an activity system is followed through time, qualitative overall transformations may also be found (Cole and Engeström, 1993, pp. 8-9).

Activity theory’s notion of socially distributed cognition originates in the core Vygotskian assumption that mind is both socially nested and derived, and also formative of social relations. The content and process of thinking are seen to be as much distributed among individuals as within them (Cole and Engeström, 1993, p. 1). This reflects the ‘multi-voiced’ complexity of human society. ‘The heterogeneity of culture supports and requires the distribution of cognition’ (p. 12), placing priority on the development of modes of organization that can harness the perspectives and energies of a much wider range of people.

There is no doubt that culture is patterned, but there is also no doubt that it is far from uniform, because it is experienced in local, face-to-face interactions that are locally constrained and, hence, heterogeneous with respect to both ‘culture as a whole’ and the parts of the entire cultural toolkit experienced by any given individual (Cole and Engeström, 1993, p. 15).

... diversity or multivoicedness is an important feature of the distribution of cognition in expert work. Potentially it is a rich source of resources, making the activity system capable of combining different viewpoints and skills in the handling of complex problems’ (Cole and Engeström, 1993, p. 31).

In turn distributed cognition leads Engeström and his collaborators to what they call ‘expansive learning’, which refers to the process whereby new collaborative approaches and projects are developed by human agents. The theory of expansive learning was first formulated by Engeström in 1987. According to Engeström and Sannino (2010) it refers to

... learning in which the learners are involved in constructing and implementing a radically new, wider and more complex object and concept for their activity... The theory of expansive learning puts the primacy on communities as learners, on transformation and creation of culture, on horizontal movement and hybridization, and on the formation of theoretical concepts (Engeström and Sannino, 2010, p. 2).

Engeström and Sannino emphasize that ‘The most important outcome of expansive learning is agency – participants’ ability and will to shape their activity systems (Engeström and Sannino, 2010, p. 20). At the same time, the main new idea here is that of expansion. ‘In expansive learning, learners learn something which is not there... the learners construct a new object and concept for their collective activity, and implement this new object and concept in practice’ (p. 2). This moves beyond the idea of learning as acquisition or as participation. ‘Moving up and outward’, expansive learning ‘tackles learning in fields or networks of interconnected activity systems with their partially shared and often contested objects’ (Engeström and Sannino, 2010, p. 1). Expansive learning has been applied widely in recent studies, including some relating to border crossing (p.
It is described as particularly useful ‘in analyses of learning in non-traditional, hybrid and multi-organizational settings’ (p. 3).

The theory of expansive learning focuses on learning processes in which the very subject of learning is transformed from isolated individuals to collectives and networks. Initially individuals begin to question the existing order and logic of their activity. As more actors join in, a collaborative analysis and modeling of the zone of proximal development are initiated and carried out. Eventually the learning effort of implementing a new model of the activity encompasses all members and elements of the collective activity system (Engeström and Sannino, 2010, pp. 5-6).

In turn this model can be applied to a larger set of networked sites:

As activity systems are increasingly interconnected and interdependent, many recent studies of expansive learning take as their unit of analysis a constellation of two or more activity systems that have a partially shared object. Such interconnected activity systems may form a producer–client relationship, a partnership, a network, or some other pattern of multi-activity collaboration… (Engeström and Sannino, 2010, p. 6).

According to Engeström, activity systems are dynamic, and this dynamism results from contradictions within and between each of the constituent components of the activity systems. Examples of contradictions can be those between the subject and object, nodes of activity, modes of activity, old tools and new objects, and so on. ‘The resulting tensions drive development of the activity system’ (Bakhurst 2009, p. 200). These contradictions lift the process of change to the transformative level, at which point when a new object emerges and subjects become motivated to achieve it (Engeström and Sannino, 2010, pp. 6-8).  

3 [Note by SM only] Oddly, Engestrom applies Vygotsky’s term ‘zone of proximal development’ to the stage of transformation, in which various possible options for development are advocated and contested. Vygotsky developed this term for the phase of learning where the child is not yet ready to develop independently but can learn in association with a more capable other, such as a teacher. When it was first shown that the capability of children with equal levels of mental development to learn under a teachers guidance varied to a high degree, it became apparent that those children were not mentally the same age and that the subsequent course of their learning would obviously be different. This difference between twelve and eight, or between nine and eight, is what we call the zone of proximal development. It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers (Vygotsky, 1978, p. 86, emphasis in original). These individual examples illustrate a general developmental law for the higher mental functions that we feel can be applied in its entirety to children’s learning processes. We propose that an essential feature of learning is that it creates the zone of proximal development; that is, learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers. Once these processes are internalized, they become part of the child’s independent developmental achievement’ (Vygotsky, 1978, p. 90). While the stage of transformation as described is one that requires networking, that is where the analogy stops. Arguably, given the first meaning used by Vygotsky, this second use of the term
The logic of the expansive cycle is such that a new cycle is assumed to begin when an existing, relatively stable pattern of activity begins to be questioned (Engeström and Sannino, 2010, p. 10).

The process of expansive learning should be understood as construction and resolution of successively evolving contradictions. ... The cycle of expansive learning is not a universal formula of phases or stages. In fact, one probably never finds a concrete collective learning process which would clearly follow the ideal-typical model. (Engeström and Sannino, 2010, p. 7)

In modeling historical change Engeström (1999) couples linear ‘action’ and ‘action time’, which is ‘basically linear and anticipates a finite termination’; with ‘activity time’ which is ‘recurrent and cyclic’ (p. 33). This uses Leontiev’s action/activity distinction. The cycle is not wholly repetitive, instead taking the form of successive transformations. Beneath expansive learning there is a sense of dialectical historical progression. Engeström’s formula allows him to model change as an empirically imaginable combination of linear evolution with transformations:

People face not only the challenge of acquiring established culture; they also face situations in which they must formulate desirable culture. In order to understand such transformations going on in human activity systems, we need a methodology for studying expansive cycles (Engeström 1999, p. 35)

Obviously an expansive cycle is a developmental process that contains both internalization and externalization. The new activity structure does not emerge out of the blue. It requires reflective analysis of the existing activity structure – one must learn to know and understand what one wants to transcend. And it requires reflective appropriation of existing culturally advanced models and tools that offer ways out of the internal contradictions. However, these forms of internalization or appropriation are not enough for the emergence of a new structure. As the cycle advances, the actual design and implementation of a new model for the activity gain momentum: Externalization begins to dominate (Engeström 1999, p. 33)

Vygotsky in his discussion of child development combines the two elements of forward movement and repetitive cycle thus: ‘Development, as so often happens, proceeds here not in a circle but in a spiral, passing through the same point at each revolution, while advancing to a higher level’ (Vygotsky, 1978, p. 56).

This assumption that ‘development’ constituted an upward progression indicates Vygotsky modernist optimism. Expansive learning shares this sensibility. In the expansive cycles the repetitive cycle is the motor of expansion and hence of improvement. The driver of the motor is contradiction. Nevertheless, Engeström’s expansive cycles are more path-dependent than the sudden shifts imagined by both Vygotsky and Appadurai. Engeström’s model is not as flexible in explanatory terms as Vygotsky’s imagined combination of revolution with evolution, in which the turning spirals

in the Vygo{}stki{t}an literature is misleading. This is not to argue the Engeström’s idea about transitional development is wrong, simply that Vygotsky’s term should not be used to apply to it.
(which indicate a bound system) from time to time must become transformed or displaced to a new location. Arguably, however, Engeström’s model is more likely to lend itself to an empirical research program. This illustrates Bakhurst’s (2009) point about the contrast between the philosophical concerns of the original Russian founders of sociocultural theory, whose goal was to explain mind, and the more practical and empirical concerns of activity theory.

**Unfinished theoretical agendas**

The evolution of sociocultural theory as activity theory thusfar has left a number of unresolved questions. These include ‘the nature and role of transformation in activity systems, the relation of collective and individual activity… and the relation of activity theory to other theories of human conduct’ (Roth, 2004. p. 7). Daniels poses the question: ‘If Vygotsky was arguing that formation of mind is socially mediated process, then what theoretical and operational understandings of the social, cultural, historical production of “tools” or artifacts do we need to develop in order to empirically investigate the processes of development?’ (Daniels, 2006. p. 37). This suggests that the question of the nature of ‘artifacts’ should be thrown open as one of the historically conditioned variables for investigation; and also that changes in the forms and qualities of artifacts (for example under the influence of global convergence) might change the sociocultural dynamics of activity.

Popova and Daniels (2004) point to the dangers of attending too much to the level of micro-genetic change when studying learning. They focus on what can be gained from a broader socio-historical view of how identity shapes and is shaped by powerful social forces. Here one advantage of the genetic method is that there is always potential for new insights to be gained by ‘re-booting’ the cultural-historical domain and tracing the effects in the other genetic domains.

**What can sociocultural theory tell us about globalization?**

**Sociocultural theory and globalization theory**

The work of Vygotsky and his successors does not share a direct intellectual lineage with contemporary studies of globalization but there are significant commonalities. It is a case of convergent evolution. Like the work of Appadurai on global cultural flows, Vygotsky’s sociocultural theory is open and non-determinist. In its most recent phase, expansive learning, sociocultural activity moves into areas such as the extended networking, loose ties and cross-border relationships that are central to globalization studies (e.g. Castells, 2000; Latour, 2005). The twin emphases of Engeström and colleagues on an expanding frontier of social activity and relations, together with the evolution of cooperative human agency, parallels globalization-related studies of the continuous expansionary dynamics of electronically-mediated networks. One of the core preoccupations of globalization theorists such as Manuel Castells (2000) is how subjectivities and inter-subjective relations are changing in the global dimension of action. The difference between the two strands of work is that whereas the globalization theorists focus primarily on the relational dynamics of networks, expansive learning continues Leontiev’s emphasis on the activity site.
Both Vygotskian theory, and Appadurai (1996) and some other theorists of globalization including Anthony Giddens (1997; 2002), approach the relationship between subject and society in dialectical terms, whereby each shapes the other. ‘The idea of humans as social is familiar’ to many research programs (Bakhurst, 2009, p. 198). In this approach, social structures are relativized by human agents and also vice versa. In contrast with orthodox psychology, Vygotsky and the globalization theorists agree that the social, not the individual, is the starting point for this dialectic. Both work programs are centrally interested in changing human subjectivities, and the formation of self-determining agency, and Vygotsky has supplied a distinctive set of tools for this inquiry that can be applied to global phenomena. Vygotsky’s discussion of children’s learning seems to echo some accounts of the formation of subjectivities in the global dimension of action (e.g. Marginson, 2010a). The whole appears in blurred form, specific zones becomes understood, and the synthetic whole becomes more clear; the social space is created on the basis of communicative relationships and this is associated with the transformation of subjectivities; and so on.

Are the changes ushered in by contemporary communicative globalization so great as to have rendered sociocultural theory obsolete? On balance we do not think so. The principal implications of globalization for social theory are the relativization of the national and local by the global, the growing importance of the global dimension of activity in its own right, and the flourishing of convergent cross-border subjectivities. Globalization detonates all generic theorizations that are premised on a bounded nation-state or exclude external relations from the domain of subjectivity. Sociocultural theory makes neither move. It emphasizes contextual linkages and relations. As discussed below, the openness and reciprocity of its modeling of structure-agency is well suited to understanding globalization. This is crucial and sustains the continuing relevance of Vygotsky’s work in this era, though in some respects that work may have been problematized by globalization.

Globalization means the elements of discontinuity, qualitative change, novelty and agency freedom have been enhanced (Appadurai, 1995; Marginson, 2010a). This has many and massive implications for social science. All social theory must address it. But arguably, the implication for Vygotskian sociocultural theory, which provides space for non-linearity and contingency, is more a change in degree (ironically) than a change in kind. We can readily recognize Vygotskian patterns in the global dimension of action. However, in the dynamic and uneven context of globalization Vygotskian ideas need to be handled reflexively. It would be ill-advised simply to transfer Vygotsky, or Leontiev, or Engeström into the study of global relations, without regard for potential theory development, as will be discussed below.

Sociocultural activity theory can be used to conduct specific empirical studies of certain global phenomena, particularly those that focus on learning and mental formation. This is not to say that all study of global convergence and globalizing subjectivities can be encompassed by Vygotskian theory or by activity theory. Globalization studies are a large, heterogeneous and eclectic area of work that ranges well beyond the studies of child development, human learning and activity sites that are the primary preoccupations of sociocultural theory.

It must be added that not all of the post-Vygotsky work that positions itself as ‘Vygotskian’ shares his theoretical sensibilities in all respects. Some sociocultural activity research, especially in the West, driven by an iterative agenda of bounded empirical
studies, uses a larger element of theoretical closure and tends to lose the rich reflexive engagement with the broad sociocultural context that is essential to globalization studies. In the global context there are less pre-given structures and a larger scope for disruptive transformations, disjunctures and innovations. Often goals are iteratively negotiated via networked collaborations—change takes the form of ‘crossing the river by feeling the stones’, in the Chinese saying—while in other cases, cross-cultural encounter may lead to a more fundamental shift that displaces the original goal. Either way, goals can travel a long away from the starting point. Closed inquiry frameworks are not much help in studying real world settings where both structure and content of object/subject relations are open to unpredictable shifts. As Bakhurst remarks: ‘You must be very cautious about given, stable structural representations where you aspire to understand dynamism, flux, reflexivity, and transformation’ (Bakhurst, 2009, p. 207).

**History and structure**

How close is Vygotsky to globalization theory, as exemplified especially by Appadurai, in his reading of structure and agency in historical context? Both Vygotsky and (more so) studies of globalization instinctively historicize the inquiry. Vygotsky shapes an understanding of history in two ways. First is the conventional for his time notion of change as development. This veers towards teleology and indicates a modernist and potentially linear bias: for example the Vygotskian framework is less well equipped to study repetitive patterns of change than it is to study irreversible forward movement. This introduces an element of determination that is not necessarily shared in globalization theory, which ought to be catholic about temporality (though it is not always so). At the same time, as noted—this is a very significant point of commonality that cannot be overemphasized—ihn his second sensibility of history, Vygotsky shares with the most generative work on globalization a theoretical framework that is ultimately open. He recognizes what we might call the essential ‘non-essentialness’ of history. Ultimately, this qualifies the modernist bias. It brings Vygotsky much closer to the more post-modern sensibility that informs globalization studies, in which not every transformation is ‘development’ (and still less linear improvement). As John-Steiner and Souberman put it in their ‘Afterword’ to *Mind in Society*:

> Vygotsky argues that because the historical conditions which determine to a large extent the opportunities for human experience are constantly changing, there can be no universal schema that adequately represents the dynamic relation between internal and external aspects of development (Vygotsky, 1978, Afterword, by Vera John-Steiner and Ellen Souberman, p. 125).

No explanation is final. Even the genetic method, a system for comprehensive interpretation and explanation, is always provisional. On one hand the openness is external to the framework, which can be disturbed by non-linear change. On the other hand openness is internal to the framework: it can be changed by contextual phenomena, with broad effects, originating in either the natural or sociocultural domains. Vygotsky makes no claim that his empirical studies can encompass all phenomena even in child development. There is no closure. For example, he ‘saw all teaching and learning as conditional and contingent’, because they were responsive to the social conditions. Human development and learning are ‘collaborative activities’ in which there are ‘no uniform methods’ (Daniels, 2001, p. 1).
Both intellectual traditions have evolved a characteristic combination of open structure with bounded structure and close-worked empirical studies. Appadurai’s idea of ‘scapes’ that are both shaping and partly open in form, and share the global space while also incommensurate with each other, captures this combination of openness and closure in a single concept. Vygotsky’s genetic domains incorporate an element of openness in the domains themselves. Both Vygotskian theory and globalization studies have developed a way to deduce from their bounded studies more general insights, without elevating these to a position of schematic determination—for example in Vygotskian work, particular studies of artifacts and mediation, and studies located in the microgenetic domain; in globalization theory that work of Held and colleagues (1999) on specific aspects of globalization.

Vygotsky’s imagining of non linear relations had antecedents in Marx and Hegel. But as a social scientist Vygotsky was well ahead of his time. Like Appadurai, when discussing both historical evolution and social relations Vygotsky is at ease with disjunction, rupture and disequilibria. It seems that these conditions are more normal than otherwise. This is close to us. Daniels (2001) remarks that like Dewey, Vygotsky wrote at a time of intense modernization, turmoil and change., enabling him to open his idea of history and relativize all social and subjective phenomena.

Has post-Vygotskian activity theory tended to rein in this historical openness and potential for diversity and contingency? Does Figure 3 above suggest homogeneity between activity systems? If so this would conflict with the notion of partial and uneven historical transformation underlying Hegel , Marx and Vygotsky. To repeat the point, a move towards greater closure would be the opposite of what is needed to understand globalization. An assumption of homogeneity holds up less well in the global setting. In imagining the global it becomes more difficult to reconcile the constraints created by bounded empirical studies with the transformative volatile cultural-historical domain. This is not to say the reconciliation is impossible, but it requires continuing reflexive attention.

**Imagining the global**

In an interesting passage in *Mind in Society* (1978) Vygotsky notes that vision and language shape differing kinds of mentality associated with specific forms of perception. This has implications for the role and positioning of bounded analytical studies within the larger intellectual program. Children seem to see the whole in blurred form at first and later perceive the separate components and actions more clearly (Vygotsky,, 1978, p. 32). This in turn enables a richer whole to form.

By means of words children single out separate elements, thereby overcoming the natural structure of the sensory field and forming new (artificially introduced and dynamic) structural centres. The child begins to perceive the world not only through his eyes but also through his speech. As a result, the immediacy of ‘natural’ perception is supplanted by a complex mediated process; as such, speech becomes an essential part of the child’s cognitive development’. ‘The role of language in perception is striking because of the opposing tendencies implicit in the nature of visual perception and language. The independent elements in a visual field are simultaneously perceived; in this sense, visual perception is integral. Speech, on the other hand, requires sequential processing. Each element is separately labeled and then connected in a sentence structure, making speech essentially analytical. (Vygotsky,, 1978, pp. 32-33, emphasis in original)
On one hand language-bounded analytical perception lends itself to separated studies that can be assembled in a larger mosaic. On the other hand, vision sustains the synthetic overview that pulls everything all together (see also Marginson, 2010c). Synthesis is a key moment and a higher order function. Within the field of perception the developing child grasps difference earlier than similarity. Vygotsky remarks in *Language and Society*:

> Our own experimental studies suggest that the child becomes aware of differences earlier than of likenesses, not because differences lead to malfunctioning, but because awareness of similarity requires a more advanced structure of generalization and conceptualization than awareness of dissimilarity (Vygotsky, 1986, p. 164)

The developing child can reorder the basis of visual perception, and this enables a succession of new and more sophisticated synthetic visions of the field (Vygotsky, 1978, p. 35). Much therefore rests on the character of vision, both in its inner form in the imagination and its outer form of observation of the real world. How much can be absorbed using empirical techniques of seeing—how far does vision of the actual extend? Is what is seen open to continual review and the perception of further and emerging phenomena? Is vision confined to the actual existing or it also takes in imagined worlds—whether imagination designed to fill the gaps in explanation of the existing world, or to create a benchmark of the desired world or of the possible and achievable. In globalization theory there is often an element of the imagined world. In part this is because of the vast complexity and continually changing nature of the terrain, which defies any attempt at exhaustive observation and description. But, argues Vygotsky, theorization is always an act of imagining. He grounds the point in V.I. Lenin: ‘Even in the simplest generalization, in the most elementary general idea, there is a certain bit of fantasy’ (Lenin, quoted in Vygotsky, 1986, p. 39).

**Global artifacts**

For the most part Vygotskyian sociocultural theory and its successors do not make a unique contribution to globalization studies. However, there is one important exception to this generalization. Vygotsky’s notion of mediation between subject and object via the use of artifacts offers something new and distinctive to empirical research on globalization—for example, it suggests the potential for sociocultural inquiry into the tools and symbols people use to reshape both themselves and their social relations in the global setting, from communication technologies to imagined worlds. People use tools to become mobile between geographical and cultural sites. Crucially, people (and institutions/organizations and even nations) use tools whether material or imaginative to move between the national, global and local dimensions of action in the multidimensional global setting.

Global artifacts are a rich line of investigation. The global space is nothing more or less than networked human relations. Mediation allows specific subject/society dynamics to be identified. ‘Mediation by tools and signs is not merely a psychological idea. It is an idea that breaks down the Cartesian walls that isolate the individual mind from the culture and the society’ (Engeström, 1999, p. 29). Globalization suggests a larger range of artifacts than hitherto, and particularly a more multiple and advanced role for the...
imagination. Implications for the remaking of Vygotskian theory will be considered in the next section.

**The networked world**

Activity theory’s notion of socially distributed cognition parallels much globalization-related theory. In the theory of expansive learning Engeström and collaborators touch on the potential of their theorization for studies of global phenomena. Engeström and Sannino (2010) remark that

There are two additional factors that add weight to the societal need for expansive learning. The first one is the emergence and escalation of social production or peer production that utilizes the interactive potential of the Internet, or Web 2.0. This opens up a field of possibilities for the formation of new types of activities and use values with huge expansive potentials, such as Linux and Wikipedia.

The second factor is the emergence and increasing presence of global threats and risks, or ‘runaway objects’, exemplified by global warming, new pandemic diseases and global financial disasters. This opens up a field of tremendous challenges for concept formation and practical redesign in a scale that has to exceed the boundaries of any single discipline, profession or organization’ (Engeström and Sannino, 2010, p. 4).

As noted they also emphasize ‘boundary-crossing’ in some studies:

Important processes of innovation and learning are increasingly taking place in collaborative constellations and networks of multiple activity systems. In studies of expansive learning, this was first taken up in a paper that put forward boundary crossing as a serious theoretical concept (Engeström, et al., 1995). Boundary crossing was characterized as ‘horizontal expertise where practitioners must move across boundaries to seek and give help, to find information and tools wherever they happen to be available’ (p. 332). ‘Boundary crossing entails stepping into unfamiliar domains. It is essentially a creative endeavour which requires new conceptual resources. In this sense, boundary crossing involves collective concept formation’ (Engeström et al., 1995, p. 333; Engeström and Sannino, 2010, p. 12)

Boundary crossing is usually associated with partnership activity (Engeström and Sannino, 2010, p. 13), and may become associated with the widespread diffusion of innovations (p. 14). In relation to global studies, a strength of the theory is its identification of the tendency to open source forms of cross-border human synchrony (Marginson, 2010a).

A major challenge for the study of expansive learning is to conceptualize and characterize empirically the new forms of agency involved in expansive processes. Perhaps the biggest challenge for future studies and theorizing in expansive learning comes from the emergence of what is commonly characterized as social production or peer production (Benkler, 2006). In social production or peer production, activities take the shape of expansive swarming and multidirectional pulsation, with emphasis on sideways transitions and boundary-crossing (Engeström and Sannino, 2010, pp. 20-21)
The work of Engeström and colleagues has been criticized on the grounds that it underplays ‘the radical transformative impact of computers, digitalization and the Internet’ (Engeström and Sannino, 2010, p. 17). Expansive learning was developed just prior to the advent of communicative globalization in the form of the Internet but as we have seen it shares some sensibilities with work on global relations. While digital examples are (arguably) under-investigated in the studies in the expansive learning literature, its techniques are readily adapted to research on global activities and subjectivities in the context of globally networked social relations.

How might sociocultural theory be developed in the light of globalization?

Wells makes the point that although we should seek to understand Vygotsky’s texts, ‘in appropriating his ideas and putting them to use, we should also be willing to transform those ideas so that they can be of greatest use to us in meeting the demands of our own situations’ (1999, p. 334). We concur with Bakhurst (2009), in his review of the different traditions within sociocultural activity theory, where he argues that critical and self-critical dialogue is essential to the project of this tradition. Given the practical ethos at the base of sociocultural theory—its Russian founders believed theory should be deployed so as to transform the world for the better—it must grow and evolve, or it loses its purchase on real educational sites.

Subject, artifact and cultural development

If, as argued by Cole and Engeström (1993), the relation between subject and society is mediated by the ensemble of artifacts, rules and the social division of labour, then it must be acknowledged that in the global setting all of these elements become more open, less path dependent and more volatile and innovation prone.

In particular, globalization invites us to reinterpret Vygotsky’s focus on the role of culturally constructed tools/artifacts in the mediation between human subject and the object of activity. Communication technologies have enabled a plethora of new artifacts. Should these artifacts be understood differently? Sociocultural activity theory argues that mediating tools transform and regulate the human mind. Does the availability of more and different mediating artifacts trigger changes in subjectivity, and does the phenomenon of more globalized subjectivities (mobile, communicative, active in more than one location and dimension); and in some instances more multiple subjectivities; change the kind of artifacts and their uses? Does globalization imply a change in the cultural historical dimension of artifacts?

‘The notion of artifact, which subsumes that of psychological tool, raises questions about the relation between the ideal and the material’ (Daniels, 2008, p. 9). Material artefacts are visible. Abstract artifacts—those that are embodied ideas—are more difficult to pin down, both conceptually and empirically. This poses challenges in a globalized context. Wartofsky (1974, p. 204) distinguishes three kinds of artifacts. Primary artifacts are physical objects such as needles, bowls, and clubs used directly in the making of things. Secondary artifacts are representations of primary artifacts and of modes of action using primary artifacts. These secondary artifacts can take the form of traditions or beliefs. Tertiary artifacts are referred to by Wartofsky as ‘imagined worlds’. He gives the example of works of art.
As discussed, globalization has opened up a new abundance of materials for human imagining, including the capacity to enter into a multiplicity of imagined worlds. The imagination is 'a form of work (in the sense of both labour and culturally organized practice), and a form of negotiation between sites of agency (individuals) and globally defined fields of possibility' (Appadurai, 1996, p. 31). It can be argued that each of the human imagination, the global imaginary itself, and artifacts for enriching its imagined worlds, can and should be considered artifacts in Vygotsky's sense. In a globalized world tertiary artifacts become more important than before in forming the human mind. Further, because global effects readily reach across distance these globally constructed artifacts likewise become far-reaching.

More fundamentally, what of the nature of the sociocultural environment in which humans shape themselves? Vygotsky (1981b) emphasized the child's active cultural adaptation to 'the environment'. 'The child develops and changes in his/her active adaptation to the external world' (Vygotsky, 1987b, pp. 151 - 152). Daniels' question is: 'What theoretical and operational understandings of the social, cultural, historical production of “tools” or artifacts do we need to develop in order to empirically investigate the processes of development?' (Daniels, 2006. p. 37). These considerations open the issue of what culture (popular or specific?) and what environment (immediate or distant, in the context of global relationships?). In a global setting, many lines of historical-cultural evolution may have affected the shaping and use of particular mediating artifacts.

In the global setting the imaginary is ‘a property of collective, and not merely as a faculty of the gifted individual’ (Appadurai, 1996, p. 8) The cultural historical formation of the imaginary, and hence the artifacts, is complex and diverse. With context volatile and blurred; when the imagination is a social practice and imagined lives provide one of the senses of context; when people talk of a real life and alongside it a second or virtual life; when schooling is no longer constrained to a physical location; when context can mean much more than the immediate context—then the Vygotskian concepts can take many forms in empirical investigation.

**Genetic method**

As we have seen the genetic method emphasizes cultural reproduction. Notwithstanding the potential for radical qualitative change (Vygotsky) or the expanding cycle of expansive learning (Engeström), in many respects social development is seen as in continuity with past developments. There is a substantial component of change that is linear and incremental in form:

The assumption that the cultural future will be more or less like the cultural past, or (which may amount to the same thing) that we can only project a future based on past, culturally mediated experience, provides one essential basis of continuity in human mental life. (Cole and Engeström, 1993, p. 21)

Because globalization transforms cultural reproduction (Appadurai, 1996) it requires us to think again about how we investigate culturally-related phenomena. In sociocultural theory, artifacts are created by humans over time and made available to the next generation, which modifies these artifacts before passing them on to its successors. Globalization forces us to modify the idea of steady, evolving, incremental changes and asks us to place greater emphasis than Vygotsky on unevenness, disjunction, novelty
and breaks. At the very least the sheer speed, scale and volume of cultural construction makes it necessary to interpret Vygotsky’s terms more reflexively. Even so, this leaves most of his schema intact.

In the global setting, not every change contributes to a forward movement; and while some linear change survives, the element of discontinuity (path-breaking) is enhanced. How much so is a moot point and one that needs empirical investigation: it is likely to vary between sites and over time. Regardless, globalization suggests the need for a retheorization and re-application of the genetic method based on the potential for larger discontinuities and more novel learning problems.

**Multi-dimensional globalization**

The socio-cultural-historical domain is broad, and in the globalized context, it encompasses multi-dimensions of globalization, such as economic, social, cultural and political, and goes beyond the geographical borders. Marginson and Rhoades’s (2002) ‘glonacal agency heuristic’ can also be employed to set the boundaries and capture different dimensions of cultural historical data for studies adopting sociocultural theory. The multi-dimensional character of global phenomena emphasizes that child development and human activity not only take place in more than dimension—global, national and local—and may take different systemic forms in each case; but that actions in one dimension affect actions in the others and these cross-dimensional effects should be accounted for.

Potentially, this triples the size of the diagrams in Figures 1 and 3 and adds reciprocal interfaces between dimensions. In turn this opens many more areas for empirical investigation.
Implications for educational research: an example

In a keynote address on ‘Socio-cultural-historical activity theories of development in the age of hyperglobalization’ Cole (2008) proposed potential lines of research and new modes of collaboration that promise to assist in theorizing what he called ‘the current state of world crisis’. On an empirical level, Julianne S. J. Huh reported an ethnography in “Globalization, Confucianism and Vygotskian Teaching Practices” (2009), exploring English language education policies through effect of globalization in Korean education, Confucianism and Vygotskian theories on language learning. We are not the only scholars thinking about the conjunction of Vygotskian theory and studies of globalization.

In this paper we have discussed meta-issues for sociocultural research posed by globalization such as the need to take into account greater openness, the application of historical-cultural reflexivity to research across the multiple global dimensions, and use of a broader notion of artifacts. What specific implications does this suggest for educational research? We provide an example common to educational practice.

[Dang Thi Kim Anh] My PhD study is about teacher learning and teaching practice. The study explores how pre-service teachers mediate learning to teach English at a University in Vietnam and the factors that influence their practice. The study explores how they use different tools and artifacts, which can be conceptualized as the activities they use in the lesson, in mediate student learning. Sociocultural theory provides a broad conceptual framework to address the research inquiry.

Teachers referred to a number of artifacts constructed as a result of globalization. Multiple aspects of globalization shaped the practice of the pre-service teachers both directly and indirectly. The facets of globalization identified in the project include: a) the influence of a worldwide culture; b) the Internet as a rich source of materials for ELT; c) Internet technological applications as tools; d) the border-crossing of people and organizations. While it is easily seen that teachers use materials from Internet websites with cultural contents different from the local culture, there is also the less visible but deep influence of worldwide culture in teacher design off some class activities.

Introducing the concept of making inferences in listening, one teacher referred to a Japanese anime, The Doraemon, much loved among Vietnamese children. She described the process:

*In the Doraemon story, Nobita just drew the head of a boat, and then Doraemon sprinkled some magic powder and the boat started to move, then the head of boat moves into the middle of the paper to make a complete beautiful boat and stops there as a picture. I thought of that and created this game.* (Hanh – Int. Rnd 2 – P. 2)

![Figure 4. Reformulation of Vygotsky’s model of mediated action as subject/object/artifact](image)
The teacher demonstrated the game using PowerPoint and with other materials from the Internet. If you just examine the activity on the surface, it is impossible to see the tremendous global influence on the imagination and creative activity of this teacher. As argued, the examination of artifacts such as this imagined construction, should account for their global genesis, alongside their local and national genesis.

The next question is how to explain the phenomenon. Vygotsky emphasized that ‘psychology teaches at every step that though two types of activity can have the same external manifestation, whether in essence or origin, their nature may differ most profoundly’ (1978, p. 63). The genetic method can be used capture a phenomenon and trace the history of its development.

While the diagram in Figure 2 helps us to capture the cultural historical dimensions, when discussing global phenomena is becomes more complex. Artifact construction and use, and child development, are both affected by the different flows or ‘scapes’ that transcend national, cultural and geographical boundaries. The imagination of the teachers at site, the activities/ cultural artifacts they use, take us beyond their local immediate context, even the national context, to far distant places that have recently become remarkably close at hand.
One implication is that for empirical research, the diagram in Figure 2 should be reworked to account for the local – national – global dimensions that affect the different layers in the whole (linear and non-linear) development process. Another implication is that in the globalization setting, cultural historical time is compressed by global flows. Therefore in addition to the sociocultural aspects, the political, economic, and technological aspects, which were captured by Appadurai as ‘scapes’, should be included in the model. In the example of the teacher constructing artifacts in lessons, the history of the teacher’s imagination cannot be fully explained without accounting for the opening of Vietnam to the world since 1986, the economic development of the country which brought in foreign cultural commodity, and fast-developing telecom systems.

The phenomenon under investigation, represented in the vertical stroke, embraced within itself different layers of development (microgenetic, ontogenetic, cultural historical) and also the local, national and global aspects. By this, we can capture the immediate and distant contexts, both in space and temporal sense and both directly or indirectly, that shape the practice of the teachers. Empirical research should capture all of these aspects. In a subsequent paper we will redesign Figure 2 to achieve this.

As Anfara and Mertz (2006, p. xxvi) observe, theoretical frameworks ‘originate in the many different fields of study and disciplines in the social and natural sciences. Thus, the well-read qualitative researcher is alert to theoretical frameworks in economics, sociology… and anthropology, to name but a few… It is, indeed, this diversity and richness of theoretical frameworks that allow us to see in new and different ways what seems to be ordinary and familiar’.
References


Educational Research and Innovation, Organisation for Economic Cooperation and Development, OECD.


