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Moving toward a Supetheory for All Seasons: Dialectical Dynamic Systems Theory and Sociocultural Theory - A Reply to McCafferty (2016)

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My paper, 'A Dialectical Reading of Dynamic Systems Theory: Transcending Socialized Cognition and Cognized Social Dualism in L2 Studies' (Karimi-Aghdam, 2016), is developed with a twofold purpose: to attempt an immanent critique of the received interpretation of dynamic systems theory (DST) ¹- labelled contextual DST- where I show that, in its extant L2 studies formulation, DST is essentially a deficient approach; and to suggest an alternative construal of DST- termed dialectical DST- where I purport to make a small contribution to theorizing a comprehensive, integrative, and unified conceptual framework to understand, describe, explain, and optimize the systematic changes of an L2 learner's multifaceted language cognizance, and the psychological and sociocultural processes and mechanisms engendering and underlying those changes. My paper (2016) is *about* DST, but the longstanding division between the social and cognitive dimensions of L2

developmental process is lurking in the background. McCafferty's (2016) paper 'Dynamic Systems Theory and Sociocultural Theory: Some Connections and Distinctions' offers a set of arguments intended to show that DST and sociocultural theory (SCT) ² share obvious conceptual currency with each other while they diverge on some core features. I propose to go through the key threads of some of his arguments and discuss, in brief, my take on them.

1. It is plausible - though not strictly necessary - to state that McCafferty's (2016) paper seems to be premised upon the assumption that there is only one canonical and univocal formulation of DST proper in applied linguistics and L2 studies in particular. What I have dubbed 'contextual DST' and 'dialectical DST', on the one hand, consist in the examination of temporal trajectory of L2 development as a complex dynamic system, whilst on the other hand, they are in fundamental ways out of step with one another. For dialectical DST, as opposed to contextual DST, a manifold of L2 development as a dynamic whole is not reducible, both ontologically and causally (i.e., is indescribable and unexplainable in terms of), to a summative aggregate of speaking events (discrete atomic L2 use) in real-time scales, observing that L2 use and L2 development are simultaneously and inherently embedded and interpenetrated across multiple orders of temporalities with bidirectional co-adaptation that obtains between them. The whole totality of L2 development, from the dialectical DST vantage point, enjoys some qualitative collective features precipitated by real-time and concrete speaking events despite the fact that they constitute a unified system. Dialectical DST, moreover, pivots its arguments largely on the fact that both qualitative change (L2 development) and quantitative change (L2 use) are implicated with time; that is, without any consideration of temporal evolutionary and transformational dynamics, the subjective lived experience of an L2 learner which is mediated, characterized, actualized, and silhouetted against the affordances of an

objective external world appears *ipso facto* to be abstracted from the sociocultural contingencies and contextual exigencies.

2. DST, at least in its dialectical instantiation, is more than a mere methodological underlaborer for different theoretical persuasions as McCafferty (2016) appears to appreciate. Dialectical DST can be described - roughly, but well enough for my present purpose - as a revolutionary and scientific paradigm; that is, a hierarchical, multilayered, developing and stratified system of coherent specifications and explications of ideas, beliefs, and practices within a disciplinary ambit. Every observational item of information- i.e., data - unavoidably is theory-laden and every theory, whether implicitly or explicitly, is premised upon a corresponding account of *Weltanschauung* (worldview). Having said this, I propound that while bringing DST, like any other research program and scientific tradition, to bear on L2-related developmental issues, it should be checked for commensurability with its underlying frame of primitive prepositions and infallible axioms (objectively unwarranted beliefs about the world) that are taken for granted in every theory construction and development. Therefore, dialectical DST does not relinquish its emphatic import to substantial meta-narratives and underlying assumptions of DST in favor of methodological outcroppings, McCafferty's (2016) primarily a methodological orientation to DST notwithstanding.

3. Meaning-making, according to McCafferty (2016), is a psychological construct in SCT whereas it has been given a short shrift in DST. Dialectical DST sees an L2 as a purposive, dynamic, complex and emergent system. Thus, it could be argued that any L2 use in different modalities, by its very processual nature, is permeated and triggered for the sake of meaning-making goal(s) and intentional purpose(s) across different temporal scales by an agentive L2 learner. Underlying this argument is a

differentia of dialectical DST that every instantiation of L2 use imbricated and mediated by sociohistorically-constructed artifacts and semiotic sign systems and recalibrated by rule-following norms *re-presents* the past and the future. To achieve present-oriented meaning-apprehending and meaning-giving goals in and through meaningful speaking events, an L2 learner canalizes, and oscillates temporally between, the past meaningful actualities and the future meaningful possibilities, rendering L2 development a rhizomatic (i.e., interconnected and multilayered) and processual totality. According to dialectical DST, L2 learner's imaginative and subjective proleptic (projective and anticipatory) goal(s) along with the past lived experiences (history of an L2 learner) coupled with the present and objective conditions constitute, and volitionally are unified into, a purposive, intentional, and meaning-burdened L2 use which is mutually embedded in, and shaped by, a sociohistorical and immediate context. Every L2 use, from the dialectical DST vantage point, is thus a meaning-oriented process of carrying out a goal-directed and cognitive action that emerges largely in and through a seamless web of speaking events, integrating synchronically and diachronically the past experiences and the projective future of an agentive L2 learner and respective situational and cultural contexts in general. There is a concord between SCT and dialectical DST in subscribing to the view that every speaking event, due to its meaning-laden nature, is intended or aimed to perceived or conceived artifacts and symbolic notations - conceptual or physical, denotative or connotative - of the objective world. It may be argued that for SCT and dialectical DST an L2 use is not a discrete instantiation or *extensive* 'quantum' (an objective, atemporal, and quantitative thing) of a preordained genetic design, which a 'single' embrained mind of an L2 learner by him/herself executes monologically. Rather, every speaking event is an agentive, emergent and

highly fluid process flowing on with a never-ceasing and successive mutability or *intensive* 'quale' (an experienced, temporal, and qualitative process). A speaking event is transposed into life through dual participation of an embodied mind of an L2 learner with discursive and encultured matrices of material and conceptual artifacts and other individuals in the extrasomatic world dialogically. It would be not unreasonable, therefore, to conclude that purposive and intentional meaning-construction of an L2 learner is the hold of both dialectical DST and SCT.

4. McCafferty (2016) provides a viable compatibilist interpretation of Vygotskian SCT and DST in that they seem to be arguing for studying the trajectory of development in the process of change over time, i.e., history of change. For one thing, as its generic name (i.e., cultural-historical theory) plainly implies, 'history' for SCT of human development is a pivotal notion. Vygotsky (1989) envisages two interlocking significations while using the term 'history' in his historical psychology; first, history means a general evolutionary approach to a phenomenon in its processual temporality and is dialectical; second, history signifies human history and is historical materialism (pp. 54-55). Vygotskian SCT historicizes human development and consciousness, intending to investigate the processual trajectory of human development evolving dynamically with both short and long time-scales that are experienced subjectively and simultaneously. Cole and Engeström (1993) maintain that human development is an emergent phenomenon harmonized in the unity of quadripartite genetic domains, viz. phylogenesis, culturogenesis, ontogenesis, and microgenesis distributed across four separate but embedded within a hierarchical scaffolding of nested temporalities, namely phylogenetic (evolutionary) time, cultural-historical (historical) time, ontogenetic (idiographic) time and microgenetic (real) time (pp.18-21). In a similar vein, dialectical DST differentiates between mutually constitutive and co-evolving

developmental time and real-time changes of an L2 system which are roughly mappable onto ontogenetic and microgenetic timescales of Vygotskian SCT. One conceivable difference between SCT and dialectical DST in this regard is that dialectical DST, in its current articulation, predominantly centers on scrutinizing temporality of an L2 system at the 'individual-lived-experience' timeframe whereas SCT takes into consideration internally relational 'individual' and 'physical-social world' temporal scales of human development. This does not entail postulating that for dialectical DST and SCT an L2 learner and the outer-sociocultural world do exist separately. Contrariwise, the subjective world qua an L2 learner and the objective world qua sociocultural umwelt, dialectically synthesized into an emergent whole, exist for one another but also by means of one another. It is worth emphasizing that inasmuch as its focus on L2 development as a human-centered and purposive semiotic system and so continual integration of meaning-constituted properties of speaking activities across historical time enfolded and unfolded mainly in linguistic praxis, dialectical DST also ineluctably grasps the effect of historical time on a language system of an L2 learner and *vice versa*. Likewise, Vygotskian SCT asserts that the combined effect of cultural-historical time and phylogenetic time on human development at the ontogenetic timescale impregnated with language mediation bring about higher-level human functions.

5. McCafferty (2016), for one, supposes that both Vygotskian SCT and DST account for micro- and macro-genesis while diverging methodologically, since - on his view - there are diacritical differences between them as to the concept of genesis, SCT focusing on the social origin of genesis while DST rivets its research agenda on how systems develop over time. I should certainly concur with differentiation of micro- and macro-genesis in terms of shorter/faster and longer/slower timeframes.

Nevertheless, if we admit micro-genesis - hence, macro-genesis- we must be prepared to not allow reducing macro-genesis, and by implication, developmental time to an accretive summation of micro-genetic changes and real-time scales, a position which, unlike dialectical DST, is taken by contextual DST (e.g., see de Bot & Larsen-Freeman, 2011). Time-evolving nature of human practical activity is central to human development. Thus, human development and within L2 studies, an L2 developmental system from the SCT standpoint is constructed by coevolution of concentric individual-level temporalities and humanity-level historical time, being both the medium and the outcome of human praxis including speaking activity. Dialectical DST, on the other hand, situates the interwoven trajectories of change of an L2 system across an L2 learner's lifespan in a temporal context. Dialectical DST distinguishes between real-time changes (synchronic variability) and developmental-time changes (diachronic variability) of a learner's L2 system but at the same time holds that they are constitutive of each other without being exclusive.

6. Lowie and Verspoor's (2015) implied ontological postulation that language use in context is a necessary and sufficient driving power for an L2 developmental system is rightly contested by McCafferty (2016). This, however, is precisely one of the linchpin differences between contextual DST and dialectical DST. Dialectical DST does not conceive of an L2 system as bifurcated into two essentially and substantially different and independent spheres namely, material/physical (socialized cognition) and mental/ideal (cognized social). Dialectical DST in line with Vygotskian SCT, however, sets out to synthesize mutual and essential relationality of cognitive and social dimension of an L2 system into a monistic ensemble invoking a dialectical method. One of the fundamental premises of dialectical DST is the assertion of an L2 system, ideated intentionally, entertained either consciously or unconsciously, and

manifested primarily by a purposive human speaking activity, to be a dynamic unitary process in a constant and ever-changing state of temporal fluidity.

7. McCafferty (2016) admitting, with Lenzing (2015), predictability and determinism of a system to be a significant building block of DST affirms that statistical predictability, even though an incidental one, is a goal for SCT³. It is a truism to contend that an emergent, self-organizing and non-linear whole such as an L2 system or human development could not be predicted *a priori* and, by the same token, is not a teleologically finalistic process. The counterargument is relatively straightforward. Change presupposes time and time presupposes change. Time is a necessary prerequisite for the multiscalar dynamicity, and, even more so, for the unpredictability and spontaneous emergence of collective and self-ordered properties of an L2 system through pervading interaction of its components and elements. Every change in an L2 system or in human development, quantitative or qualitative, is a time-variant and irreversible process. In fact, subscribing to predictability, even to a crude one, and determinism goes absolutely counter to time-locked, non-linear, and self-organizational, and emergent nature of an L2 system. Dialectical DST, unlike contextual DST, is congruent with Vygotskian SCT in contradistinguishing real-time quantitative changes and developmental-time qualitative changes. Gradual and adaptive changes (continuities) and abrupt and revolutionary changes (discontinuities), based on SCT and dialectical DST views, are interrelated, rendering respective systems to be in a state of dynamic and punctuated equilibrium while creating potentiality for radical change.

To conclude I would like to put forward that the multiple terrain of convergence and divergence between Vygotskian SCT and DST shows promise of a fruitful synthesis

for L2 developmental studies. Moreover, DST, a fledgling approach in L2 studies, still cannot be resolved into a wholly tractable and principled research program and its conceptual anatomy of the issues needs to be clarified adequately. This does not mean, however, that the foregoing remarks, as far as they go, are not intended to be critiqued or revisited.

Notes

1. Here when I use 'DST' in reference to McCafferty's (2016), I mean his construal of dynamic systems theory as a monolithic approach to studying L2 developmental issues. 'Dialectical DST' and 'contextual DST' stand committed respectively to an alternative reading of dynamic systems theory and a received doctrine about dynamic systems theory in L2 studies. Invoking 'DST' without any premodifier, put broadly, signifies a multidisciplinary and overarching frame of reference for multiple theoretic persuasions which endeavor to study becoming-in-time dynamics of emergent, complex and non-linear systems.
2. In the following I use (Vygotskian) sociocultural theory (SCT) interchangeably with cultural-historical theory (CHT).
3. James P. Lantolf (personal communication) does not affiliate, in accord with a Marxian notion of dialectics, to the position taken by McCafferty (2016) with regard to considering predictability a subsidiary goal for SCT-oriented research.

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