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On Reality of Thinking: A Response to Chris Drain's "Ideality and Cognitive Development"

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Chris Drain's response "Ideality and Cognitive Development" (2020) to my "The Match of Ideals" (2020) aims for further analysis of the phylogenesis of conceptual cognition. Drain suggests complementing Vygotsky's and Leontiev's accounts of higher mental functions and specifically human consciousness with Tomasello's concept of "shared intentionality" (2020, 7, cf.). Drain intends to contribute to the clarification of the emergence of abstract normative cognition that is required for the rise of mathematical thinking. This, in turn, will contribute to the understanding of the phylogenesis of abstract, mathematical thinking because, as I, following Damerow, discuss in "The Match of Ideals", a parallel between phylogenesis and ontogenesis of human consciousness and higher mental capabilities can be drawn.

In response to Drain, I propose the following:

1. Pertaining to Vygotsky, I argue that the formation of language and the emergence of abstraction provide human beings with a new set of tools and a realm of action—emancipation of thinking (problem solving) from immediate field of (bodily/physical) activity opens up the sphere of conceptual activity with the use of what elsewhere I call "conceptual cognitive organs" (Azeri 2013).
2. Furthermore, I argue that the mathematical attitude towards the world emerges from within the need to measure—modern mathematics and physics too still are "bound" to measuring activity.
3. Moreover, I propose that thinking (thought) emerges as a real, material force in precise sense of the term under capitalism which yields the possibility of "pure" theoretical sciences.

This, of course, will be only a schematic account pointing to the direction of further research; I mainly discuss for points 1 and 3 here. I hope I will be able to provide more detailed arguments for all the aforementioned in future works.

Language and the Conceptual Sphere of Activity

The formation of human language marks, among others, a passage from mere sensation to thought, which according to Alexandra Luria, is comparable to the leap from inanimate to animate matter capable of sensation (Luria 1982, 37; Azeri 2011, 21). With the formation of human language thinking, and subsequently human sensation, acquires a generalized, meaningful form, i.e., it "reflects" reality in a generalized form where generalization signifies "a verbal act of thought" related to the constitution of word-meaning as the first and foremost generalization and the unit of consciousness (Vygotsky 1987, 47).

With the constitution of consciousness human experience/behaviour acquires a new "doubled" form. All animal behaviour can be exhausted with reference to inherited experience and personal experience (unconditional plus conditional reflexes). This, however,

is not the case with human beings; in humans we have to introduce new elements, for instance, *historical* experience (inherited from our ancestors through learning; accumulated historical experience), which is extended. Furthermore, there is *social* experience, that is, the experience I acquire in connection with other persons. The most important component of human experience, furthermore, is human being's active adaptability (human activity)—adaptation of the environment to ourselves (Vygotsky 1997a, 68). Pertaining to Marx, Vygotsky further argues that the products of human activity initially appear in an ideational form in human imagination. “This perfectly indisputable explanation by Marx refers to nothing other than the doubling of experience that is unavoidable in human labor... [We] provisionally call this new type of behavior doubled experience” (1997a, 68).

Consciousness has a regulatory role with respect to behaviour (Vygotsky 1997a, 72); that is, it chooses the appropriate circular reactions as new stimuli in order to evoke a new series of reaction that fits the state of the organism the best. Given that human consciousness is a social relation, it follows that consciousness is a combination of regulatory circular reactions that facilitate the active adaptation of the individual person to the social environment.

The aforementioned regulatory role, which yields to the emergence of social behaviour, is realisable through certain tools that Vygotsky names, after the image of means of material production, psychological tools or instruments (1997b, 85). Language (speech) is the most significant psychological tool, which constitutes and determines consciousness with the use of regulatory reactions. The formation of consciousness as a social relation and the constitution of social (joint) action that precedes constitution of consciousness as the individualized sociality is mediated by speech that facilitates the emergence of reversible stimuli/reactions as the basis of social (joint) action.

It is through speech as a specific form of social stimuli that myself, the “I”, is formed and becomes comparable to others; through speech I get to know myself just in the same way that I get to know another. “The mechanism of social behavior and the mechanism of consciousness are one and the same. Speech is, on the one hand, the system of the “reflexes of social contact” and, on the other hand, the system of the reflexes of consciousness par excellence, i.e., an apparatus for the reflection of other systems” (Vygotsky 1997a, 77). That being the case, the constitution of individual consciousness and of social behaviour coincides—they are two facets or forms of existence of one and the same essence, that is, the labour (human activity) process in the widest sense of the term—and thus the formation of joint action is explained. In other words, even what Drain, following Tomasello, calls “joint intentionality” is necessarily preceded by human (productive) activity or labour as the ultimate socializing and humanizing factor. In this sense Vygotsky (and Leontiev) resonates Engels who considers hands not only the tools but also the product of labour and conceives of the latter as the condition of the emergence of human being as a truly “social animal”—that is, labour is the condition of constitution of society as an organism and of the individual consciousness.

The formation of consciousness and its emancipation from immediate field of activity is possible through deployment of specific artificial devices, that is, psychological tools that are utilized by human beings in order to master their own behaviour just as technical devices are deployed toward mastery of objective processes. These “artificial formations” include “language, different forms of numeration and counting, mnemotechnic techniques, algebraic

symbolism, works of art, writing, schemes, diagrams, maps, blueprints, [and] all sorts of conventional signs” (Vygotsky 1997b, 85).

The modifying effect of psychological instruments on behaviour are comparable to the modifying effect of a material tool on material outward activity—the effect of, say, a spoon, when it is deployed as an instrument that mediates eating. Like material (physical) tools, psychological instruments have an “ideal” structure in the sense of positing the rules of action—which are forms of human action objectivized in response to form of objects—and/or being the mediation of deployment of rules of action. The rule is generated through the tool by social and historical milieu. The tool is the middle term between the socially-positing rule of activity and internalization of the rule by the individual person in her process of humanization and individuation. The tool, further, points to the active role that the subject has in the process of individuation.

Individuation is not a causally deterministic process alike to formal logical instantiation. The very deployment of tools provides the individual with her peculiar position in this process. Since tools are not natural but social-historical constitutions they open up a space for the intervention of the individual who deploys them. Language and sign systems as well as concepts and “conceptual organs” “modify the entire course and structure of mental functions.” Constancy of meaning, which is also a showcase of tool-like function of language and has a revolutionary effect on the actualisation of human behaviour is achievable at a higher degree through language. For the non-human animal a means of action does not acquire a constant meaning; in other words, the means of action for, say, an ape, is bound to the immediate field of activity; it does have a meaning only within that particular frame.

The instrument, on the other hand, in human activity acquires a specific, fixed meaning; it becomes a tool; it is concretized through the act of abstraction. To produce meaning, therefore, is to turn a mere object into a tool of activity, that is, to fix its social meaning, to universalize it. A tool is a concrete universal. With sign, however, we enter a higher level of abstraction and thus of concretization. As Vygotsky states in comparing the use of means by apes and human beings, “*Man wants the stick, the ape wants the fruit... The tool requires abstraction from the situation. Tool use requires an-other type of stimulation and motivation. The tool is connected with meaning (of the object)*” (1997c, 131, emphases original). These tool-like or instrumental functions are of a *mediating nature; they replace direct associative connections* (what Leontiev would later criticize as the “postulate of directness”). In this sense, consciousness is objectivity subjectivized (Azeri 2011, 11-15) via sign systems, where these latter should be conceived of as a specific form of tools, i.e., “psychological”, conceptual or “ideal” tools.

Materiality (“this-worldliness”) of Thinking

The constitution of human consciousness is also marked by the separation of thinking (mental) from the bodily movement; as Vygotsky put, “in human activity the natural combination of perception and movement is disintegrated as soon as the mediation of sign and word is introduced into action and is replaced by cultural structural relations; thus, the whole human activity attains an indirect, mediating character (1999, 31).” Human behaviour, generally speaking, acquires a tool-mediated character and thus it becomes “independent”

from immediate stimuli. Tool-mediated activity is a “delayed” response to stimuli; so is the case with thinking activity: thanks to psychological and conceptual tools, human thinking is emancipated from its immediacy (that is from being a mere solution (an immediate response) to immediate problems) and acquires an independent character in form of pure “mental” activity; it becomes “thinking-for-the-sake-of-thinking” or universal thinking. Yet, owing to the sociality of psychological and conceptual tools the internalization of which amounts to the formation of individual consciousness, “pure” thinking also emerges as truly social—universal thinking is social thinking, to put it differently, pure thinking is “joint” thinking.

This is where the unity between (joint/social) activity and thinking is once again constituted but at a higher level and in a more determinate and concrete form.

1. Joint activity refers to social form of activity: human as a truly social animal (and thus human society) is the product of labour (activity).
2. What is distinctive about activity not only is its goal-directedness but, furthermore, is its emancipated (abstracted from immediacy) and thus determinate and concrete form, meaning that it is determined and organized through “verbalized” sign systems and instruments.
3. It is in relation to this latter aspect that human activity (labour) becomes “rational” activity. It is with human language that, say, the formation of a new plane of sensory experience that consists of elements of past and present experience becomes possible.
4. This new sphere, although has its root in sensory experience, is emancipated from its immediacy, i.e., it is no more bound to the presence of the immediate object of action. All in all, joint activity refers to activity determined and organized by humans through tools of action—it is socially significant activity, meaning that it is realizable only if it attains a particular social form—so is pure, universal thinking.

From the uncritical, commonsensical point of view, the emergence of thinking as an “independent” form of activity, which is also echoed in subject-object and thinking-reality dichotomies, is conceived of as the expression of the separation between two distinct substances—thought and matter (Mind and body, consciousness and behaviour etc.) which in turn has been uncritically appropriated by almost all philosophical schools. The uncritical commonsensical conceptualization of the relation between thought and activity, which also yields idealisms of different breed, is responsible for what Vygotsky calls “the illusion of two moments: I thought and I did (1997a, 76).

It is important to emphasize the social “nature” of human activity in general and thinking in particular and their consequent tool-mediated structure. Thinking as an independent, emancipated activity appears only in society and through social activity and is thus bound to deployment of artefacts and tools. Proper thinking, i.e., knowledge or intelligent behaviour means acting/working with tools and artefacts in concordance with their form—social significance. The social significance of the artefact is derivable from its social function. It is true that, say, ergonomic specificities of artefacts impose on the user a certain form of

behaviour; However, this ergonomic “meaning” is not deducible from or the expression of the material-physical structure of the artefact just as the “meaning” of value is not deducible from or a function of the chemical makeup of the coin or the banknote. The ergonomic makeup is just the carrier (trager) of social significance, where the latter is of an “ideal” form in Ilyenkov’s sense of the term.

One who employs an artefact properly is one that uses it in accordance with this social significance. Furthermore, an artefact is the carrier of the meaning only as a part of and within a web of artefacts (just as is the case with concepts). In a specific situation, deploying a knife, a fork, or a spoon can be accompanied by using one’s hand in order to eat a certain food; for instance, eating a lobster with the use of a cracker and one’s hands in modern capitalist society complements the socially significant (“proper”) use of fork and knife, while in another level of development of a society it can assume a totally different meaning –as is the case, say, with members of “primitive” societies who use their hands and nails in order to cut food etc. Social significance is the expression of the “ideal” as the set of rules necessary for continuing social existence.

Marx’s critique of Hegel, in the “general introduction” to *Grundrisse*, which is also reproduced in the “postface” to *Capital* vol. 1, is based on the latter’s dismissal of the necessary social nature of thinking. Hegel realized a great deal when stated that the material is the realization of thought; yet, as Marx notes, he failed to realize that “thought” or the “ideal” is the product of human activity (1982, 102; 1993, 101); that thought is what social humanity thinks and the source of its objectivity, independence, and power is its being a social product. Thus, he was misconducted by this very discovery as he identified his own thinking with *the* thought and thus reduced reality to the expression of (his) absolute inwardness. Ignoring the social/society as the precondition of emergence of thinking pushes Hegel to conceive of thinking, in contrast to his own intentions, as substance, and thus irreconcilable with matter (reality).

Idealism is the speculative explanation of thought’s independence; it is a perverse and thus incomplete acknowledgment of the emergence of thinking as a real, objective force; in order to overcome the problem of transcendence (the match of knowledge and reality, match of thinking and matter) it either reduces all reality to philosopher’s subjective thinking (Hegel) or divests thinking of all its content and determinations and turns it into mere, empty form (Kant, Husserl). Substance materialism, on the other hand, recapitulates this image by reducing thinking to a mechanically conceived motion of physical particles; thinking, in this view, is not a “necessary” but a “secondary” attribute of matter. Hence, substance materialism is bound to contemplation. Practical or activity materialism, which prioritizes action over substance, on the contrary is the scientific/dialectical explanation of the “this-worldliness” (Marx 2010, 3) of thinking and its consequent independence and emergence as a “concrete”, determinate force.

Concluding Remarks

In *The German ideology*, Marx and Engels argue that at the outset, division of labour, which is responsible for both quantitative and qualitative unequal distribution of labour and its

products (Marx and Engels 2010, 46), is “natural” and accidental; it is based on factors such as physical strength. Division of labour emerges in its true sense only when a division of material and mental labour appears. “From this moment onwards consciousness *can* really flatter itself that it is something other than consciousness of existing practice, that it *really* represents something without representing something real; from now on consciousness is in a position to emancipate itself from the world and to proceed to the formation of “pure” theory, theology, philosophy, morality, etc.” (Marx and Engels 2010, 45).

The age-old division between head and hand is revolutionized under capitalism, not in the sense that the ideal or the head becomes an independent substance that exists by and in itself; rather, because it becomes a fully-fledged concrete, “material” power; the head or the “abstract” becomes a material force; the seemingly divide between the mental and the manual, the divide between theoretical and practical is in fact a perverse image of the full unity and materialization of the ideal/abstract. This is so because thought is a mode of human practice—the practical essence of thinking, its “this-worldliness” which serves as the source of its “truth” or veracity.

Under capitalism thought becomes a truly material force of social nature because capitalism provides the ground for true universalization of thinking: capitalist society is an organic whole which, in contrast to pre-capitalist social formations, is organized toward the universal goal of production of value. It is the social form of human activity under capitalism, which appears as a complete divorce between the theoretical (mental) and practical (corporeal), that facilitates “pure” theoretical activity. Whereas in reality “pure” thinking is the consciousness and the form of thinking under capitalist mode of production. With capitalism abstract thinking arrives at “a comparatively high stage of development”; the emergence of abstract thinking as a material force is not the consequence of an evolutionary process where rudimentary abstract biological functions ripe into fully abstract abilities/faculties; rather, it is a socially determined process, which in turn enables us categorize such precedent biological capabilities as potentials.

By separating thinking from its human roots, idealism divests thinking from its objectivity and its capability to impact reality. Idealism’s mystically active thought is mere passivity; it is nothing other than the sanctified image of the existing world—hence idealists’ conservatism. Materialism, is the acknowledgment of the concreteness and reality of thinking based on its being human thinking in social reality, that is, it is thinking that has a determinate social form—thinking as an “ideal” where the latter signifies the form of human activity objectivized and the form of objective reality subjectivized.

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