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Are objective sciences really off-culture productions?

If one asks a mathematician what kind of role the biographical dimension plays in the advancement of exact sciences, the most spontaneous and common answer would usually be to oppose contingent, biographical facts to the necessity and impersonality of demonstrative science. The underlying assumption is that individuals manage to grasp an already existing knowledge that, by virtue of faculties endowed to particularly gifted minds, gets gradually unveiled through history. This assumption rests upon an implicit divide between contingency and necessity which devaluates the biographical dimension of knowledge by relying on categories as ill-defined as that of 'genius'. To a larger extent, it also entails a global devaluation of intersubjective practices and transforms highly cultural phenomena such as traditions and schools of thoughts into mere contingent ones the role of which can be left aside.

I would like to focus on how to avoid the pitfall in which one is likely to be trapped in when confronted to the sham alternative between contingent biographical elements versus necessary impersonal knowledge. I will first reconsider the 'platonistic' epistemology usually taken for granted in the exact and natural sciences which assumes that objectivity is only reached when all traces of human construction are left aside. Secondly, by giving Ernst Cassirer's notion of a "symbolic form" a socio-semiotic and technical meaning, I would like to show that such a renewed notion of a symbolic form is instrumental when one wants to describe semiotic processes that anticipates further developments by being able to adapt its very structure to new circumstances as it is the case in the exact sciences. The challenge here would be to expand Cassirer's point of view by showing that *writing* should be viewed as a symbolic form and that it is a precondition for this very specific kind of discourse know as "science" to evolve and expand. Therefore, culture is neither a passive background from which the exact sciences would miraculously emerge by cutting the ties they have with it, nor do the exact sciences only "participate" in culture by using some of its available tools: they actually *produce* culture in a very specific mode that cannot be severed from other semiotic productions.