ON THE DYNAMICS OF PHYSICAL INTERACTIVE INFORMATION SYSTEMS

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Abstract. The dynamical aspects of the physical interactive information systems are discussed. The dynamical hypothesis based on the Faradey–Maxwell "short–range action" ideas is formulated.

This short note being devoted to the dynamics of the interactive systems may be considered as a addendum to the article [1], where the kinematical aspects of such systems were discussed. All ideological motivations should be found in the least paper.

One of the open questions, which was formulated in the article [1], is why the kinematical description of the physical interactive systems proposed there is possible. To give an answer one should to discuss the dynamical aspects of such systems. It means to describe the nature of physical forces, which govern the processes in the interactive information systems. As it was clarified in the paper [1] the physics of the information media, structures and systems has deal with the subject–object interactions so that the subject is essentially integrated into the physical picture. Such interactions are described in terms of observations and intentions, however the physical dynamical agent of such interactions was not specified. Experimentally, the interactions manifest themselves by the subject–object scattering. The analysis of the real systems allows to state that such scattering is as a rule nonpotential and the interactions are not Hamiltonian. This fact admits a dynamical interpretations in terms of the Faradey-Maxwell "short-range action" dynamical ideas based on the concept of a field.

The Dynamical Hypothesis. *The subject–object interactions are realized by means of the dynamical medium, the "field of forces", which will be called "māyā".*

The term "māyā" has the original sense being very closed to one specified in the dynamical hypothesis.

The natural consequence of the dynamical hypothesis is the presence of the free states of "māyā" without any subject and any object. Really, they are just these states explaining an existence of the kinematical description of the physical interactive systems as it was proposed in [1] and, possibly, they may be useful for analysis of some features of the intersubjective information transmissions discussed in [2].

All these facts allow to formulate the dynamical hypothesis above. However, it is too natural that this hypothesis needs a very careful and accurate verification and theoretical elaboration to be more than a hypothesis only. At least, the author hopes that it may be useful even now as a technical supposition for our formal analysis of the experimental data without any claims on a description of the reality itself.

References

[1] Juriev D.V., On the description of a class of physical interactive information systems [in Russian]. Report RCMPI-96/05 (1996) [e-version: mp_arc/96-459].

[2] Juriev D.V., Droems: experimental mathematics, informatics and infinite dimensional geometry [in Russian]. Report RCMPI-96/05^{+} (1996).