Social Interaction in Knowledge Acquisition: Advanced Curriculum
Critical Review of Studies Relevant to Social Behavior of Infants

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INTRODUCTION

Igor Val Danilov is an academic at the Academy Angelica Constantine of Rome, founder of Academic Center for Coherent Intelligence, researcher in social interaction. Academic background: Engineering physics, Education and Media management.

Comprehension and interaction with social reality are key issues for the cognitive development. They form many social skills such as language and knowledge acquisition, manifesting themselves practically in social behavior. The question of how and when the meanings of first phenomena of reality are acquired by an empty mind can reveal the ontogenesis of social interaction (i.e., the question of how and when human beings begin behaving socially). Developmental psychologists consider that initial learning occurs within a shared referential context through repetitive multimodal routines, which allow infants to utilize current knowledge to predict and acquire new meanings [2]. Danilov and Mihailova [3] argued that acquisition of knowledge is mainly based on discovery of new key relationships between cause and effect within prior knowledge, and/or on the opening links between elements of prior knowledge and new information domain.

This review in particular is designed to investigate more specific questions of what helps newborns and infants behaving socially during experiments, where these human beings do not yet know enough meanings of social phenomena to socially behave and with no communication between subjects.

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ACQUISITION OF SOCIAL PHENOMENA

The author believes that the acquisition of first social phenomena is still a subject of discussion. The author also believes that any theory of knowledge and/or mind, in order to become acceptable to the academic community, must comply with the laws of physics and be supported by mathematical models. This means that having a deeper understanding of the physical processes of information transfer that underlies initial learning is the goal of current and future researches. The above reflection noted that the attitude of men to some physical features of other individuals is social phenomena acquired in the process of social learning. Therefore, the current review examined social interaction of newborns and infants, studying what can help newborns behave socially in different social tasks – (a) recognition of faces: Other Race Effect (ORE), Other Species Effect (OSE), facial attractiveness, and (b) categorization of words – until infants understand enough meanings of phenomena from social reality to initiate social behavior their own.

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NEWBORNS AND INFANTS BEHAVE SOCIALLY: FACIAL RECOGNITION

(1) Goren et al. [15] showed that newborn tracked a moving schematic face with a strong preference for the face patterns over the other stimuli [15][16].

(2) Newborns preferred their mother's face over a stranger's face [17]-[20].

(3) Newborns prefer faces from their own-ethnic group, ORE [21][22].

(4) Preferences of infants depend on their caregivers [23].

(5) 3-month-old infants prefer the natural composition of inner features of faces rather than the same features, but in an unnatural position.

(6) Newborns recognize familiar faces even presented partly [25].

(7) Newborns prefer attractive faces [26].

(8) The 3- to 4-month-olds infants prefer attractive faces of cats [26].

(9) The 6- to 9-months-old infants recognize race even through observing grayscale faces in black-and-white photographs [27].

(10) The 3-month-olds infants from cross-race environment did not show ORE [29].

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NEWBORNS AND INFANTS BEHAVE SOCIALLY: WORDS CATEGORIZATION

(11) Categorization of social phenomena is the skill that allows for social interaction. Adequate interaction with objects depends fundamentally on a person's ability to categorize [30]. How infants bring order into their world by categorizing objects is a core issue for the research in cognitive and language development. Ferry et al. [31] and then Perszyk and Waxman [32] found that 3- to 4-month- olds infants already can categorize words – fishes and dinosaurs from different classes – that do not fit into their personal reality.

DISCUSSION

The review evidently shows a discrepancy between the complexity of tasks and ability of infants to solve them. The analysis of the above noted 11 facts enlightened in the following statements:

– Newborns have very limited knowledge of social reality to behave socially on their own, since their mind does not maintain any communication. Even if one ignores the necessary effectiveness of communication skills to maintain the acquiring social meaning mechanism and assumes that one of the existing hypotheses (or all together) promotes the mechanism of initial learning, then newborns would not have the time to acquire the meanings of enough social phenomenon to understand social reality to such an extent

– The 3- to 4-month-olds infants cannot independently understand phenomena that are not related to their social reality, which is very limited. 'Infants cannot themselves recognize and classify inappropriate phenomena that are absent or inaccessible to their reality; even if one forgets about the problem of assimilating of first notions and the acquiring of the first words, and supposes that infants somehow themselves have already learned some basic set of meanings, there is another problem of comprehension of abstract phenomena – the above-noted fishes and dinosaurs are not suitable objects for the categorization experiment with 3- to 4-months-old infants; it is very hard to believe that without the help of adults they can categorize such abstract phenomena [3, p. 155].'

CONCLUSION

These achievements of infants are possible only through their collaboration with adults. Adults somehow guide infants without any perceptual instruction and/or hints to them. This supposition is also supported by the facts that: the preference of 3- to 4-month-olds infants depends on their caregivers (fact 4); infants from cross-race environment did not show ORE (fact 10); and infants independently can solve tasks even difficult for adults: the 6- to 9-month-olds infants recognize race even through observing grayscale faces in black-and-white photographs (fact 9).

Hence, it is possible to conclude that the initial social learning occurs through non-perceptual social interaction at least partly. One possible explanation for this phenomenon was introduced by Danilov in the theory of Coherent intelligence: 'Coherent Intelligence is an effect of unconscious collaboration provided by interconnection of many brains united by entanglement state of their neurons – the phenomenon of quantum entanglement of particles – which is stimulated by common emotional arousal. This connection of entangled neurons may unite neural chains of different cerebrums and maintain their coherent mental process [33, p. 109].'

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FUTURE WORK

Recent studies show that group collaboration in problem-solving can significantly increase memorization by 28%, the effect of which increases to 30% in a month. The crucial point of the Problem Based Learning (PBL) is a discovery or insight, which is still inexplicable, unpredictable and uncontrollable process [35].

The PBL method was established to involve problem solving in the learning process at every stage. 'In PBL, the problem comes first [39]'. The teacher needs to create quite difficult problems to 'switch on' the phenomenon of insight in students. It shouldn't be just a set of tasks as a formal pretext to invite students into an entertaining lesson.

Taking into account all the mentioned above challenges, the PBL requires confident involvement in its process of high-order thinking with deep levels of information processing and critical thinking skills to achieve success. The author believes that future researches on non-perceptual interaction could be able to develop a PBL method in which teachers can predictably improve the implicit memory of students, incorporating higher-order thinking with deeper levels of information processing in learning. More research is needed to expand our knowledge on non-perceptual social interaction in order to support the development of advanced curriculum based on the PBL method.

THANK YOU FOR ATTENTION

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