

Review report on Dr. Ildikó Király's dissertation entitled "Curiosity and social interpretative schemas: their role in cognitive development" for the Hungarian Academy of Sciences

Dr. Ildikó Király's dissertation presents a new framework for understanding cognitive development as guided by social learning. The dissertation argues for the existence of a set of interpretative schemas or generative models that infants are genetically endowed with in order to learn from and about social partners.

The framework integrates and expands previous accounts proposed by the candidate herself as well as by other colleagues in the social cognition and cognitive developmental domain, providing a new, ambitious and overarching theory. The synergistic integration of these existing models is achieved by introducing innovative new concepts, such as curiosity, as well as by bringing memory, a cognitive ability rarely considered in this regard to bear on social learning processes. This innovative new framework is formulated in 12 clearly-articulated, coherent thesis points, making specific claims and empirical predictions about different aspects of social learning and cognitive development.

The proposed framework is clearly a novel and impactful contribution to theories of developmental psychology. It has already yielded remarkable results, and it defines a powerful research agenda that the potential to break new ground in infant research.

Quite remarkably, these thesis points are backed up by a massive and compelling body of empirical evidence in the form of methodologically sound, theoretically well founded and carefully conducted experiments, published in leading international journals. As these publications well attest, the candidate has managed to build an extensive network of highly productive national and international collaborations, and she has successfully mentored a large number of students and post doctoral researchers.

The theoretical contribution and the empirical results reported in the dissertation, as well as Dr. Király's achievements in terms of teaching, mentoring, collaborations and research management clearly position her as a leader in the field, and fully justify the public defense of the dissertation.

The presented framework raises exciting new questions and issues that could be addressed and discussed further during the oral presentation.

First, the basic model assumes that curiosity drives learners to seek out information from social partners and to share it. E.g. on page 15: "We thus posit that the most important catalyst of development - fueled by curiosity - is to become experts in social contexts, namely sharing the knowledge of partners." While it is clear that it is in the interest and benefit of the learner to seek out information, it is much less clear why, once the information is learned, the individual might want to share it. Evolutionarily, one can easily imagine situations where it is more advantageous to keep information to oneself (e.g. about scarce resources) and not to share. Why is share such an essential part of the proposed theory?

Second and relatedly, in the current theory, the epistemological burden is on the learner: driven by curiosity, he/she seeks out information. Other theories, like natural pedagogy, also evoked in the dissertation as a background assumption, argue that the burden is on the knowledgeable social partner to share information. The notion of curiosity in the current proposal seems to suggest the former, but then by blending in the notion of sharing, conflates the two possibilities. The proposed theory's concept of naïve sociology further complicates matters in this regard. Can the candidate make it more explicit on whom her theory assumes the epistemic burden to be and why?

Third, the contents of learning could be discussed further. What type of knowledge each of the proposed learning mechanisms is assumed to transmit? It is proposed that each mechanism has its own specific triggers, and a few examples are given, e.g. ostensive communication in natural pedagogy. Object-based learning (learning from a social partner) and social learning (learning about a social partner) are also distinguished. But a more systematic account could be given for each mechanism of its triggers and of the type of knowledge it transmits. It could also be discussed how the proposed mechanisms interact with other learning strategies in the case of knowledge that can also be obtained non-socially (e.g. knowledge about the physical world can also be obtained through individual, non-social observation or experimentation etc.). Or while language is clearly socially transmitted, the role of goal-directed, pedagogical transmission is less obvious (in particular for phonology, morphology and syntax, i.e. the structural aspects of language), and possibly other mechanisms need to be posited. More generally then, what is the division of labor in explain cognitive development between the proposed theory and other learning mechanisms? What are the domains of application? What are the limits?

Fourth and related, how does the proposed theory distinguish between naïve psychology and naïve sociology?

Fifth and last, the proposed theory argues that episodic memory develops late, and is thus mainly absent in infants and young children, who attempt to extract the most general information possible, as this is what supports the ability to best predict future events (e.g. thesis point 5). While I am fully sympathetic to the idea that infants attempt to extract the most general information possible, and there seems to be plenty of empirical evidence supporting this view, in at least some cognitive domains, e.g. language, I am not sure why this excludes the possibility of also having episodic memory in addition, as is the case in adults. Why is it a priori necessary to assume that the choice is binary and infants only have one or the other, but not both types of memories?

In the light of the above, I consider Dr. Ildikó Király's dissertation to be suitable for a public defense.

A fentiek alapján, Dr. Király Ildikó MTA doktori értekezését nyilvános vitára bocsáthatónak ítélem.



Gervain Judit

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