Symbolic representation in AI: a perspective from C.S.Peirce's Semiotics

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Abstract: Representations and symbols are present in Artificial Intelligence since its origin, but it is still an open debate in cognitive science community. We present Peirce's philosophy of sign as a theoretical framework to study representations, their varieties and processes in Artificial Intelligence. His theory has been brought forth as a theoretical start point for discussing such processes in AI, but as we will argue, only partially or imprecisely, limiting the full extent of possible contributions. This is an initial work on bringing forward this framework, yet we provide possible contributions to the debate on representation. We believe that a more extensive application of concepts and models from Peirce's semiotics can in fact aid in a wider understanding of representation processes and in the conception of cognitive architectures.